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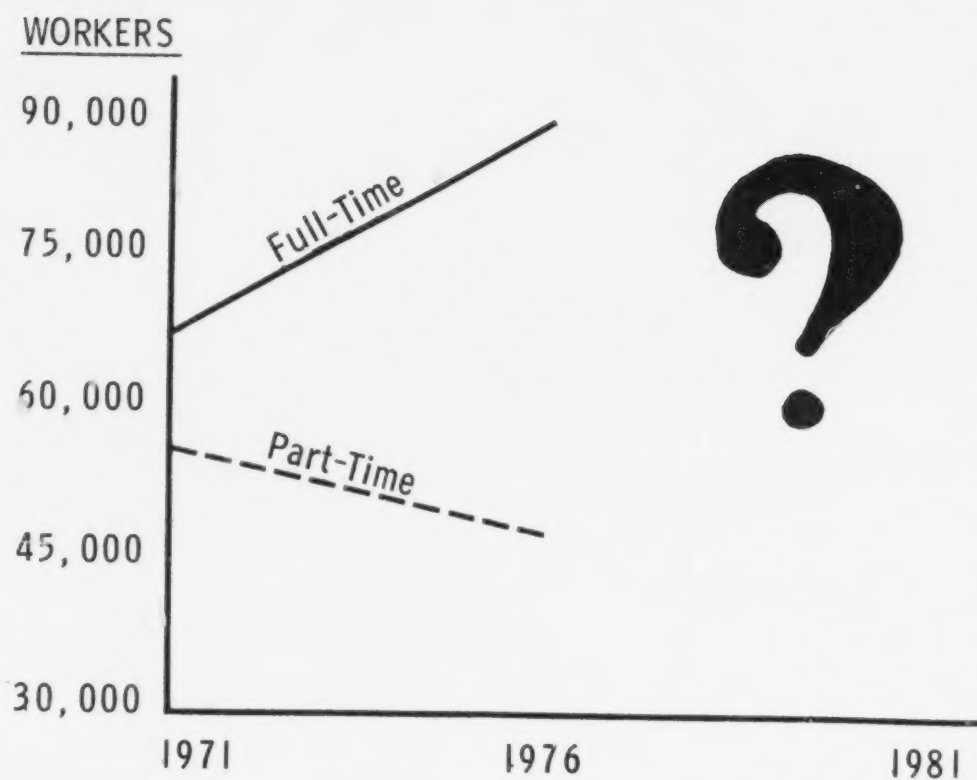
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ABSTRACT

In order to meet the needs of educational planners this study was made to determine present and projected employment opportunities in New Jersey in natural resources and agriculture in respect to: (1) full, seasonal, and part-time employment, (2) desirable level of education for specific jobs, (3) salary characteristics, and (4) descriptive labor market information. The total population of agribusinesses was stratified and sampled with a mail questionnaire, using the job title as the major unit for data analysis. The agribusinesses were basically stratified by (1) the 23 business categories, (2) the northern, central, and southern geographical regions of New Jersey, and (3) business size as defined by no employees, 1 to 25 employees, and 26 or more employees. Changing employment patterns were projected from 1971 to 1976, including a 30.7 percent increase in full-time positions from 665,757 in 1971 to 85,930 in 1976, corresponding to a 17.2 percent decrease in seasonal or part-time positions from 55,548 in 1971 to 45,974 in 1976. A need was indicated for 19,627 additional full-time workers, although there would be a surplus of 4,434 seasonal or part-time workers. Numerous tables present the data. (Author/AG)

NEW JERSEY MANPOWER NEEDS
IN
NATURAL RESOURCES AND/OR AGRICULTURE



RUTGERS UNIVERSITY
NEW BRUNSWICK
NEW JERSEY
1972

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NEW JERSEY MANPOWER NEEDS
IN
NATURAL RESOURCES AND/OR AGRICULTURE

COOPERATIVE RESEARCH PROJECT #5427

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CONDUCTED

BY

RUTGERS UNIVERSITY
COLLEGE OF AGRICULTURE AND ENVIRONMENTAL SCIENCE
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PREFACE

The industry of Natural Resources and/or Agriculture is basic to other industries. It is so immense and so thoroughly integrated with other industries that its scope is not easily circumscribed nor its gross national product readily measured. As this basic industry became more technical, more commercial, and more integrated with other sectors of the economy, information on workers with Natural Resources and/or Agricultural competencies and skills in manufacturing, wholesale and retail trade, services, and government was lost in the composite of data for each of the above conventional reporting classifications.

In this publication are manpower data provided by New Jersey employers. These data would otherwise be unavailable except in fragmented ways. Described herein are present and future occupational opportunities in New Jersey, educational training levels deemed necessary, and wages which can be expected for specific jobs.

Information on job titles provides educational planners with the basics for determining general areas of subject matter to be taught in courses. Clustering of the related job titles creates occupational areas and information which are essential in planning for instructional programs. The main chapters of this report were arranged, in most cases, because of commonality of the subject matter.

Baseline data presented herein should be of considerable assistance to New Jersey's educational planners responsible for implementing new programs and in reviewing on-going training programs at all levels and institutions within the state. These data should also be of interest to governmental agencies and related businesses and industry. The ultimate use intended for this publication is to encourage the training of a supply of graduates and entry level workers that will correlate with the manpower needs of the Natural Resources and/or Agricultural employers in New Jersey and thereby, improve the efficiency of matching people with jobs.

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ABSTRACT

Purpose: The main purpose of the study was to determine present and projected employment opportunities for jobs in natural resources and/or agriculture in respect to: (1) full-time and seasonal or part-time employment; (2) educational levels desired by employers for specific jobs; (3) salary characteristics; and (4) descriptive labor market information.

Method: The total population of businesses in natural resources and/or agriculture was stratified by: (1) the 23 business categories; (2) the northern, central, and southern geographical regions of New Jersey, and (3) previous business size as defined by 0 employees, 1-25 employees, and 26 or more employees. Several exceptions to business size were necessary when this information was not available. Each stratum of business units was sampled with a mail questionnaire. Data were analyzed with the job title as the basic unit.

Findings: Changing employment patterns were projected for the five-year period from 1971 to 1976. A 30.7% increase in full-time positions from 65,757 in 1971 to 85,930 in 1976 was projected. The 17.2% decrease in seasonal or part-time positions was from 55,548 in 1971 to 45,974 in 1976. An analysis of new positions and replacements indicated a need for 19,627 additional full-time workers and a surplus of 4,434 seasonal or part-time workers.

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I. INTRODUCTION

Comprehensive planning for educational programs in natural resources and/or agriculture requires current assessments and projections of labor market information. Planning information is needed to provide occupational preparation that is responsive to the changing needs of New Jersey industry. New Jersey, with the most intensive population density of any state in the nation, is facing challenges in the efficient utilization and improvement of renewable natural resources before these problems occur in less densely populated states. Trained manpower must be available to solve these problems and to provide the new services demanded by our citizens. Our youth are also seeking satisfying careers when they enter the labor market. For future educational programs, the leadership in schools must consider: (1) the changing employment patterns in natural resources and/or agriculture; (2) the increased public emphasis on the conservation, utilization, and improvement of natural resources; (3) the reallocation of open spaces to the urban sprawl; and (4) the development of new consumer-oriented service businesses in natural resources and/or agriculture. Base line data are needed to provide a coherent relationship between labor market information and educational programs.

The Problem

Comprehensive manpower information has not been available in a form that could be used to plan training programs for

occupations in natural resources and/or agriculture. Most federal and state statistics on occupational needs are categorized by an industry classification instead of by occupations. Natural resources and/or agriculture is not an industry by itself; it is a group of related components of many industries. Educational programs are developed around the competencies needed for a job or a cluster of jobs. For example, there are more similarities than differences in the competencies required by veterinarians whether they are involved in private practice with small animal hospitals, regulatory activities with government agencies, or research development projects with pharmaceutical companies. Detailed information on the kinds of jobs, educational levels, and income characteristics will provide data for planning relevant and meaningful educational programs.

Background of the Study

Comprehensive planning for the coordination of manpower needs and training opportunities for occupations in natural resources and/or agriculture has been in a developmental stage during the past decade. Prior to 1963, the available information was limited almost exclusively to national projections of manpower needs. Federal laws favorable to vocational education and manpower training during the early 1960's stressed a need for more definitive information concerning the occupations for which students were being trained. In addition to planning efforts in vocational education and manpower training, New Jersey is also in the process of preparing a comprehensive plan for higher education. Changing skill requirements and shifts in occupational

careers can adapt to present and future needs.

The national outlook for most occupational opportunities in natural resources and/or agriculture is optimistic. A review of national projections by Fanning (1970) indicates that the five areas of environmental management -- ecology, earth sciences, resources and recreation, environmental design, and environmental protection -- will increase from 655,990 professional and paraprofessional jobs in 1970 to 1,181,800 by 1980. A review of the various state studies by Carpenter and Rodgers (1970) indicates that employment in off-farm jobs requiring competencies in agriculture are increasing while jobs in farm production are decreasing. They also noted considerable variation in occupational needs among the various states that were studied.

Several sources provide a partial composite of the economic and labor aspects of businesses related to natural resources and/or agriculture in New Jersey. Lambert (1968) concluded that the total economic impact of agriculture and agricultural-related businesses in New Jersey exceeded 1 1/2 billion dollars in 1966. Morrill, Hunter, and Carncross (1968) found that the problem of hiring qualified employees was a major problem for most of the New Jersey farm and farm-related industries in their study. Selected census reports by the U.S. Department of Commerce (1969, 1970a, 1970b, 1970c, 1970d) also provide data on the number of businesses and number of people employed by different industries. The census information relates to number of people within industries rather than the type of jobs within these industries.

Efficient and economical educational programs depend on sound educational priorities that are based on adequate data for determining future trends. Information is needed on the changing occupational opportunities, educational levels needed for specific jobs or job clusters, and an indication of the relative economic rewards of the various occupational opportunities. Part-time or seasonal workers constitute a significant portion of the labor force; additional information on the composition of this group in respect to their status as migrants, housewives, day-haul workers, retired persons, moonlighters, etc. may have some implications for variations in educational programs. Preparation and/or lack of preparation for employment has many implications for our entire society.

Objectives of the Study

1. To determine the present and projected employment opportunities for occupations in natural resources and/or agriculture.
2. To determine the educational levels desired by employers for selected job titles in natural resources and/or agriculture.
3. To determine salary characteristics for selected job titles in natural resources and/or agriculture.
4. To determine general characteristics of the seasonal labor force (i.e. migrants and other categories) for occupations in natural resources and/or agriculture in respect to off-season employment activities.

5. To determine employer views of the future manpower situation in New Jersey for occupations in natural resources and/or agriculture.
6. To determine present and projected output of potential employees from New Jersey educational institutions.
7. To explore the potential for the continued periodic projection of occupational opportunities and estimation of institutional graduates available where this knowledge is a unique condition for employment.

Operational Definitions

Family-operated Businesses: Firms that reported their businesses as family operations without any reference to job titles or 1976 projections.

Full-time: Refers to a job that involves the equivalent of 150 or more full-time days per year.

Job Title: The name by which a specific job is generally known.

Natural Resources and/or Agriculture: Refers to those activities requiring skills and knowledge of the functions of the production, processing, marketing, related services, conservation, utilization, and improvement of natural resources and/or agriculture.

Part-time or Seasonal: Refers to a job that requires less than the equivalent of 150 full-time days per year.

Standard Industrial Classification Code: A grouping of business according to their: (a) services rendered, (b) products manufactured, (c) processes used, and (d) raw materials used.

Basic Assumptions and Limitations of the Study

The identification of basic assumptions and limitations is important so that the study is interpreted with these considerations in mind. The implementation of a research design is often characterized by a series of compromises due to the availability of financial and informational resources. The following three basic assumptions and the possible limitations resulting from them are an integral part of this research design.

First, it was assumed that employer responses provide the most reliable data concerning occupational opportunities in the respective business areas. The composite ability of employers to predict future manpower trends appears sound. Employers are constantly increasing or decreasing financial investments based on their future expectations of business trends.

Second, it was assumed that data collected with the use of a mail questionnaire would be valid data. The rationale for the use of the mail survey was: (1) it is an accepted research practice; (2) it provides more efficient use of the project resources of money and staff; (3) it creates less interruption of an employer's business than the use of personal interviews; and (4) it reduces the time required to collect the data.

The third basic assumption of the study was that the mailing lists obtained for the study represented the total universe of employers in each of the business categories. The major list for the study, which was provided by the New Jersey Division of Employment Security, included employers with a \$1,000 or more annual payroll; it did include almost all of the employees, but it

excluded some small family-operated businesses. The list for certified nursery dealers and nurserymen was the most complete list used for the study since both large and small business were included. The list of municipalities, counties, and departments of state government was also complete. The list for farmers other than nurserymen represented the greatest under-count; it included only those farmers who were members of the New Jersey Farm Bureau. The survey does not include vocational agriculture teachers, science teachers, grounds maintenance workers for schools and nonagricultural companies in addition to many small businessmen who were excluded because their annual payroll was less than \$1,000. Although it was expected that the total projections would be underestimated due to the nature of the mailing lists, it should be emphasized that these were the best estimates available short of a complete census count of every individual in the state.

II. PROCEDURE

Identification of the Population

The advisory committee identified the business categories related to natural resources and/or agriculture that were important to New Jersey in respect to number of business firms and number of people employed. Governmental agencies and census reports provided the preliminary information in respect to the economic and manpower importance of each business category. A statistical review of business firms in selected business categories from regulatory lists was compiled by the Division of Employment Security of the New Jersey Department of Labor and Industry and the New Jersey State Department of Agriculture. This information was supplemented by economic and labor force statistics from selected census reports by the U.S. Department of Commerce (1969, 1970a, 1970b, 1970c, 1970d) and regular reports from the Statistical Reporting Service of the U.S. Department of Agriculture (1971-1972). The business categories and/or governmental units selected are identified in Table 1.

The population of the business categories was determined by the most complete lists of business firms and/or governmental employing units available in each category. The Standard Industrial Code was the guide for classifying employing units into business categories. The population of all categories, with the exception of nurseries, nursery dealers, farming, and governmental employing units, was provided by the Division of Employment Security of the New Jersey State Department of Labor

TABLE 1

STUDY POPULATION OF SELECTED BUSINESS CATEGORIES IN
NATURAL RESOURCES AND/OR AGRICULTURE IN NEW JERSEY

	No. of Firms or Governmental Employing Units
I. HORTICULTURAL BUSINESSES AND SERVICES	
1. Nurseries	1001
2. Nursery Dealers	271
3. Horticultural Services	1075
4. Golf Courses	184
5. Florists	452
6. Farm and Garden Supply	179
II. NATURAL RESOURCE BUSINESSES AND GOVERNMENTAL SERVICES	
1. Sporting and Recreational	76
2. Water Supply and Sewage	70
3. Municipal and County Government	586
4. State and Federal Government	6
III. AGRICULTURAL PRODUCTION AND RELATED SERVICES	
1. Commercial Farming	3727
2. Farm Machinery	116
IV. ANIMAL SERVICES	
1. Animal Health and Care	347
2. Pharmaceutical Research	90
3. Race Tracks and Stables	43
V. FOOD PROCESSING INDUSTRY	
1. Meat Products	98
2. Dairy Products	112
3. Canned Fruits and Vegetables	30
4. Grain Mill Products and Services	43
VI. FOOD DISTRIBUTION INDUSTRY	
1. Wholesale Food	1238
2. Retail Food	2514
VII. LUMBER AND BUILDING MATERIAL SERVICES	1102
VIII. FISHERY INDUSTRY	58

and Industry. This list included all firms with an annual payroll of \$1,000 or more during the past two years. A complete list of nurseries and nursery dealers was obtained from the 1970 List of New Jersey Certified Nurserymen and Dealers, which was compiled by the New Jersey State Department of Agriculture. The best available list for farming was the membership list of the New Jersey Farm Bureau; nurserymen were deleted from this list because the 1970 List of New Jersey Certified Nurserymen and Dealers provided a more complete population. Lists of governmental employing units, such as municipalities, counties, etc. were available from governmental directories. The total population of each of the business categories, and/or governmental employing units, which was a result of the screening and selection process, is found in Table 1. The data in Table 1 do not include businesses that had moved out of New Jersey or had gone out of business.

Sampling Procedure

Generally, the sampling procedure was as follows: Each business category represented a separate population which was stratified by geographic area and size of business. Then the sample size was calculated for each of the strata. The procedure was designed to insure representation of differences in respect to business categories, location of business by geographical area, and by size of business in respect to the number of employees. Some exceptions to the sampling procedure were necessary when

preliminary data were not available or when unique circumstances indicated that variations to the basic approach were needed.

The geographical stratification of business firms within the business categories was according to their location in the (1) northern, (2) central, and (3) southern regions of the state. Businesses located in the counties of Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex, Union, and Warren were grouped into the northern region. The counties of Burlington, Mercer, Middlesex, Monmouth, and Ocean were grouped into the central region. The southern region was composed of the counties of Atlantic, Camden, Cape May, Cumberland, Gloucester, and Salem. Some businesses operated in several areas of the state, so they were sampled in an at-large or state-wide category.

The stratification by size of business was accomplished mainly by classifying the size of their work force by number of employees during the month of September 1970; this information was provided by the Division of Employment Security of the New Jersey State Department of Labor and Industry. The three strata for size of business were (1) 0 employees, (2) 1 to 25 employees, and (3) 26 or more employees.

The formula for determining the sample size for each strata was:

$$n = \left(\frac{\frac{N}{C^2 N}}{\frac{(CR)^2}{(CV)^2}} + 1 \right)$$

when: N= total population
 n= sample population
 C= error tolerated in population (5%)
 CR= normal deviation (for 95%, use 1.96)
 CV= coefficient of the variation (25%)

Several exceptions to the procedure for sampling by size of business were necessary. The nursery category was stratified by number of acres in the nursery business because information on the number of employees was not available; the two strata included (1) businesses with less than 10 acres and (2) businesses with 10 acres or more. Information was not available for classifying farming, governmental employing units, or nursery dealers by size; the final stratification for each of these areas was only by geographical region. The size of the farming sample was doubled for each strata after the size had been determined by the formula because the population appeared quite diverse. Governmental employing units also provide wide diversity in respect to job titles and number of employees in occupations related to natural resources and/or agriculture; 100% of the governmental employing units received the questionnaire.

Design of the Questionnaire

The basic questionnaire format included: (1) the letter of introduction, (2) instructions, (3) basic format for manpower needs data, and (4) descriptive information. Fifteen lists of job titles were developed for soliciting manpower needs data from the twenty-four business categories. A list of job titles was used for several business categories when similar job titles were developed.

The development of the lists of job titles was accomplished in four stages. First, a tentative list of occupational job titles available in New Jersey, that required some training in natural resources and/or agriculture, was prepared by the Bureau of Manpower Services of the New Jersey State Department of Labor and Industry. Second, the list was revised and adapted to business categories as information on business firms in each category became available. The Dictionary of Occupational Titles was the primary guide used to select the job titles for the various business categories. Third, due to the long list of job titles in semi-skilled areas, many of these job titles were grouped when they involved similar subject matter content. The grouping of semi-skilled job titles provided a more meaningful list for obtaining information needed to plan educational programs. Fourth, the variations of the questionnaire were pre-tested and reviewed informally by individuals representing the various business categories. A sample of the final revision of the questionnaire is in Appendix A.

Data Collection

A mail survey was conducted to solicit employer responses during the period from January 2, 1972 to April 28, 1972. The initial mailing was supplemented by two follow-up requests at approximately three-week intervals to those who did not respond. A complete questionnaire and a self-addressed, stamped, business reply envelope was included with each mailing.

Treatment of the Data

The data on manpower needs, educational levels desired by employers, and salary characteristics were coded and keypunched on computer data cards. Computer analyses of the data were calculated by the Rutgers University Computer Services Center. Descriptive data were analyzed by content analysis.

The estimations of manpower needs were calculated using data from respondents in the sample who returned questionnaires. The data were stratified according to the size categories used in sampling the population. Some business firms did not list job titles or 1976 projections but they did report themselves as family-operated businesses. Prior to calculating manpower needs, the stratified population of firms in each business category was reduced by the percentage of business firms that were reported as family-operated businesses. Information on the estimated number of family businesses is reported within the text for each business category. A comparison of the total population, sample population, and sample returns in respect to family-operated businesses and non-family-operated businesses is in Appendix B.

The job title was the basic unit within each business category for estimating manpower needs. The total population estimate for each business category was the sum of the total population estimate for all job titles within that category. The following formula was used to estimate the total population

of each job title from the sample data:

$$Y_i = \sum_{j=1}^3 N_{ij} \bar{y}_{ij}$$

when: Y_i = total projected population for job title i

N_{ij} = total number of firms in size category j for business category

$N_i = \sum_{j=1}^3 N_{ij}$ = total number of firms for business category

$\bar{y}_{ij} = \frac{\sum Y_{ij}}{N_{ij}}$ = average of the sample for job title i and size category j

$\bar{y}_i^{st} = \frac{1}{N} \sum_{j=1}^3 N_{ij} \bar{y}_{ij}$ = stratified average of the sample for job title i

n_{ij} = number of business firms in sample for job title i and size category j

Coefficients of variation were calculated and are reported in Appendix C for a selected sample of job titles.

The data on manpower needs were analyzed to determine the number of additional people needed for each business category during the five-year period. Expansion or contraction within

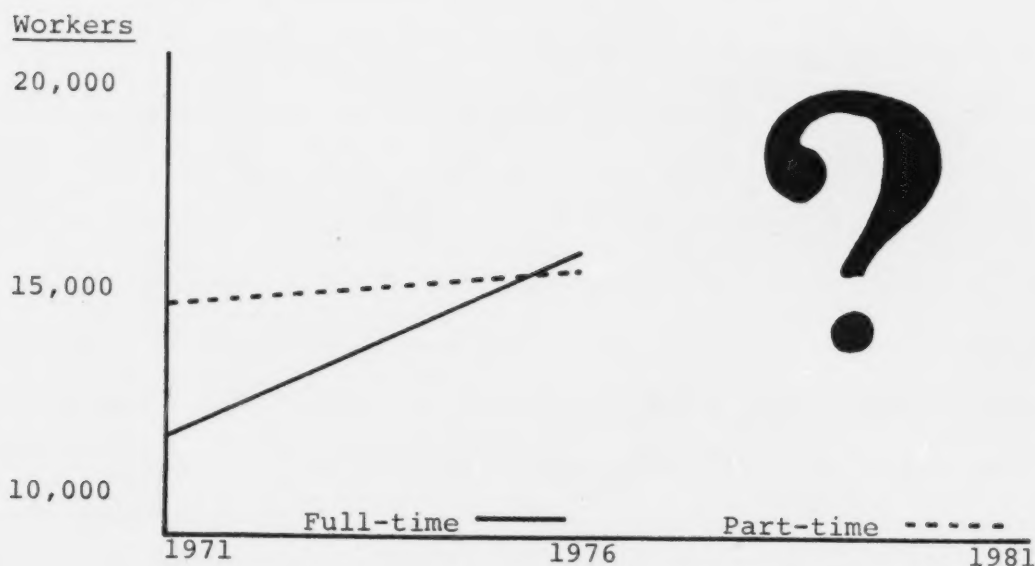
each business category was considered in addition to an annual replacement rate due to retirement and other related factors. The 2% average rate was selected after reviewing information from the U.S. Department of Labor (1969) on developing manpower projections. The average annual work force for the calculations was determined by averaging the 1971 and 1976 estimations. The replacement rate does not consider mobility from one occupation to another.

Data on the educational levels desired by employers were tabulated by the percentage of employers specifying each educational level. Since some employers specified more than one educational level for some job titles, the total percentage for a specific job title may be more than 100%. The educational level for some job titles was not reported by employers.

Salary characteristics data were analyzed to provide the lowest, highest, and mean for both the beginning weekly salary and the potential maximum weekly salary for each job title. Data were not available for some job titles. Although these data were tabulated based on the limited number of questionnaires that included salary information, they were reported because they represented the best information presently available.

Descriptive data on seasonal employment and the general manpower situation were analyzed by content analysis. Subjective judgements were made to group responses of similar content to provide a more coherent reporting of the descriptive data.

III. HORTICULTURE AND HORTICULTURAL BUSINESSES AND SERVICES



An increase in demand for people with skills and knowledge in horticultural businesses and services was projected for the five-year period from 1971 to 1976. The estimations in Table 2 combine the six areas of nursery, nursery dealer, horticultural service, golf course, florist, and farm and garden supply businesses. The area of horticultural services consists mainly of landscaping and arboricultural services. A 28.4% increase in full-time positions from 11,929 in 1971 to 15,314 in 1976 was projected. An additional 3.4% increase in seasonal or part-time workers from 14,614 in 1971 to 15,116 in 1976 was projected for the same five-year period. Considering a 2% annual replacement rate due to retirement and other other factors, 4,578 people will have to be recruited and trained for the 3,385 new positions and the 1,193 replacement positions to provide the projected manpower

needs for full-time positions. An additional 1,963 seasonal or part-time workers also will be needed for the 502 new positions and 1,461 replacement positions. Further analysis of Table 2 indicates a trend toward more highly skilled or specialized workers when the increases for all workers are compared with the respective 5.2% and 26.6% decreases in full-time and part-time unskilled laborers.

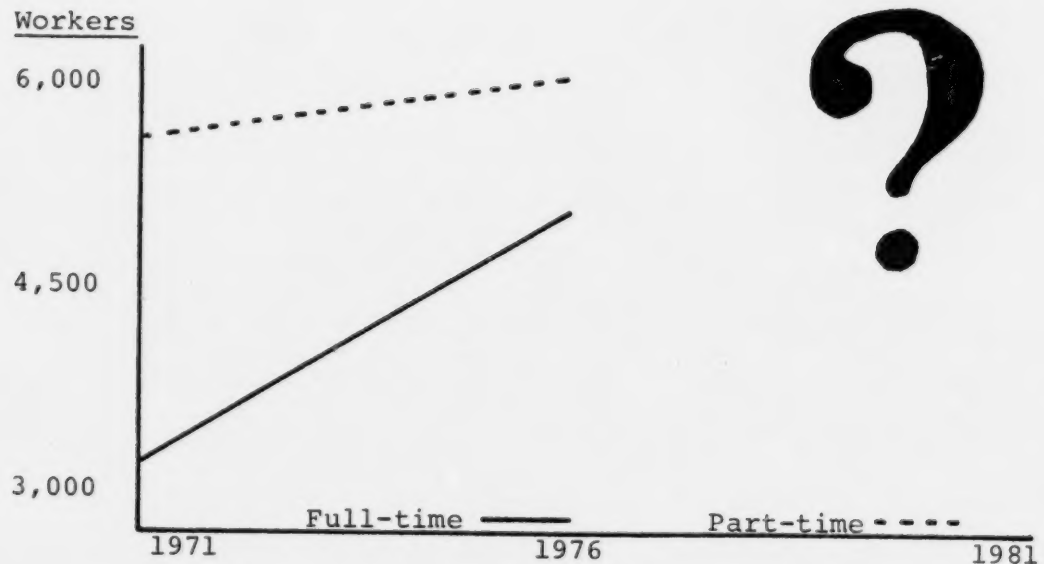
A more detailed analysis of the trends in horticultural business and service occupations is available on the following pages. Table 2 provides a composite analysis of the manpower need trends in these occupations by job titles. The subsections for nursery, nursery dealer, horticultural service, golf course, florist, and farm and garden supply businesses provide trends for manpower needs, educational levels desired by employers, salary characteristics, and additional information on the general manpower situation in New Jersey.

TABLE 2
ESTIMATED EMPLOYMENT IN HORTICULTURAL BUSINESSES
AND SERVICES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Agric. Equip. Oper.	530	518		754	579		42.3	11.8
Assistant Manager	0	31		0	31		0.0	0.0
Asst. Superintendent	9	0		9	0		0.0	0.0
Chemical Sprayer	30	28		50	38		67.0	35.7
Equip. Set-Up Man	8	6		2	0		- 75.0	-100.0
Feed Mixer	14	0		14	0		0.0	0.0
Floral Delivery	0	12		0	12		0.0	0.0
Floral Designer	1313	806		1363	1120		3.8	35.7
Florist	9	0		0	0		-100.0	0.0
Flower Grader	0	10		0	0		0.0	-100.0
Flower Grower	32	24		39	24		21.9	0.0
Flower Handler	77	1148		77	1224		0.0	6.6
Foreman	35	0		42	0		20.0	0.0
Greenhouse Worker	206	107		214	138		3.9	29.0
Greenskeeper	231	367		246	319		6.5	- 13.1
Groundskeeper	598	763		874	897		46.2	17.6
Guides	0	30		0	0		0.0	-100.0
Heavy Equip. Oper.	25	12		25	0		0.0	-100.0
Insect Control Spec.	25	0		0	50		-100.0	Plus
Landscape Architect	162	85		275	42		69.8	- 50.6
Landscape Contractor	13	0		13	0		0.0	0.0
Landscape Foreman	135	0		189	0		40.0	0.0
Landscape Gardener	1526	1495		2236	1951		46.5	30.5
Lawn Maint. Foreman	25	0		0	0		-100.0	0.0
Lawn Technician	75	63		138	88		84.0	39.7

TABLE 2 (continued)

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of No. of	Full Time	Part Time	No. of	Full Time	Part Time
Manager/Superintendent	882	77		1066	62		20.9	- 19.5
Mechanic/Helper	274	140		350	162		27.7	15.7
Nursery Foreman	40	0		35	0		- 12.5	0.0
Nursery Worker	1109	1856		1544	2292		39.2	23.5
Nursery Worker (sales)	20	40		30	50		50.0	25.0
Nurseryman	14	27		34	61		142.9	125.9
Owner	20	0		10	0		- 50.0	0.0
Packer/Shipper	15	198		25	183		66.7	- 7.6
Partsman	28	7		21	7		- 25.0	0.0
Plant Man	14	7		20	41		42.9	485.7
Rose Man	5	0		0	0		-100.0	0.0
Sales Clerk	457	815		761	698		66.5	- 14.4
Salesman	469	184		860	352		83.4	91.3
Shrub Pruning/Shaping	25	0		25	0		0.0	0.0
Skilled Land. Worker	43	206		80	252		86.0	22.3
Small Engine Mech.	20	7		27	0		35.0	-100.0
Tree Foreman	125	0		138	0		10.4	0.0
Tree Pruner	905	118		989	100		9.3	- 15.3
Tree Surgeon	195	24		232	42		19.0	75.0
Tree Surgeon Helper	80	74		145	67		81.3	- 9.5
Truck Driver	781	1045		1068	1059		36.7	1.3
Truck Driver, Wareh.	20	0		20	0		0.0	0.0
Unskilled Laborer	1231	4257		1167	3121		- 5.2	- 26.6
Warehouseman	54	27		82	54		51.9	100.0
Weed Control Spec.	25	0		25	0		0.0	0.0
Total	11,929	14,614		15,314	15,116		28.4	3.4

Nurseries

Nurserymen projected a 32.6% increase in full-time positions and a 5.9% increase in seasonal or part-time positions during the five-year period reported in Table 3. They indicated a need for 4,308 full-time workers in 1976 compared with 3,250 in 1971. The estimation for seasonal or part-time workers was 5,979 in 1976 compared with 5,645 in 1971. Recruitment needs for replacement and expansion during the five-year period included 1,436 full-time and 915 seasonal or part-time workers. A trend toward more highly skilled or specialized workers was indicated when the increases for all workers were compared with the respective 29.2% and 20.4% decreases in full-time and part-time unskilled laborers. It should be noted that these figures do

not include the 18.6% of the businesses that were reported as family operated without any reference to job titles or 1976 projections.

Table 4 provides some indications of the educational levels desired by employers for selected job titles. It indicates areas of need for vocational, 2-year collegiate, 4-year collegiate, and short-term courses for many of the job titles in addition to the on-the-job training provided by employers.

Table 5 provides information on the 1971 salary characteristics for selected job titles. Although the data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. They reported that 17.1% provide housing for seasonal employees and 7.1% employ migrants. The seasonal or part-time work force included students, housewives, and retirees in addition to those who find other jobs, are unemployed, or return to Puerto Rico during the off-season.

The employers' views of the future manpower situation in New Jersey included: (1) shortage of skilled labor; (2) employees expect too much pay for too little work; and (3) liberal welfare regulations negatively affect the work force. The number of employers who reported the future manpower situation as good were equal to the number who reported the future outlook as bad.

TABLE 3
ESTIMATED EMPLOYMENT IN NURSERIES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Agric. Equip. Oper.	135	110	200	140	48.1	27.3
Assistant Manager	0	31	0	31	0.0	0.0
Floral Designer	122	168	122	245	0.0	70.0
Flower Grader	0	10	0	0	0.0	-100.0
Flower Grower	20	0	15	0	-25.0	0.0
Flower Handler	77	1148	77	1224	0.0	6.6
Greenhouse Worker	199	107	214	138	7.5	29.0
Groundskeeper	66	230	127	306	92.4	33.0
Heavy Equip. Oper.	25	0	25	0	0.0	0.0
Landscape Architect	20	36	70	10	250.0	-72.2
Landscape Foreman	40	0	56	0	40.0	0.0
Landscape Gardener	520	199	765	260	47.1	30.7
Manager/Superintendent	337	0	398	0	18.1	0.0
Mechanic/Helper	100	30	95	15	-5.0	-50.0
Nursery Foreman	30	0	25	0	-16.7	0.0
Nursery Worker	853	1245	1177	1553	38.0	24.7
Packer/Shipper	15	168	15	153	0.0	-8.9
Rose Man	5	0	0	0	-100.0	0.0
Sales Clerk	56	121	112	100	100.0	-17.4
Salesman	132	92	305	204	131.1	121.7
Skilled Land. Worker	30	82	30	127	0.0	54.9
Tree Pruner	15	15	36	0	70.0	-100.0
Truck Driver	162	86	238	66	46.9	-23.3
Unskilled Laborer	291	1767	206	1407	-29.2	-20.4
Total	3,250	5,645	4,308	5,979	32.6	5.9

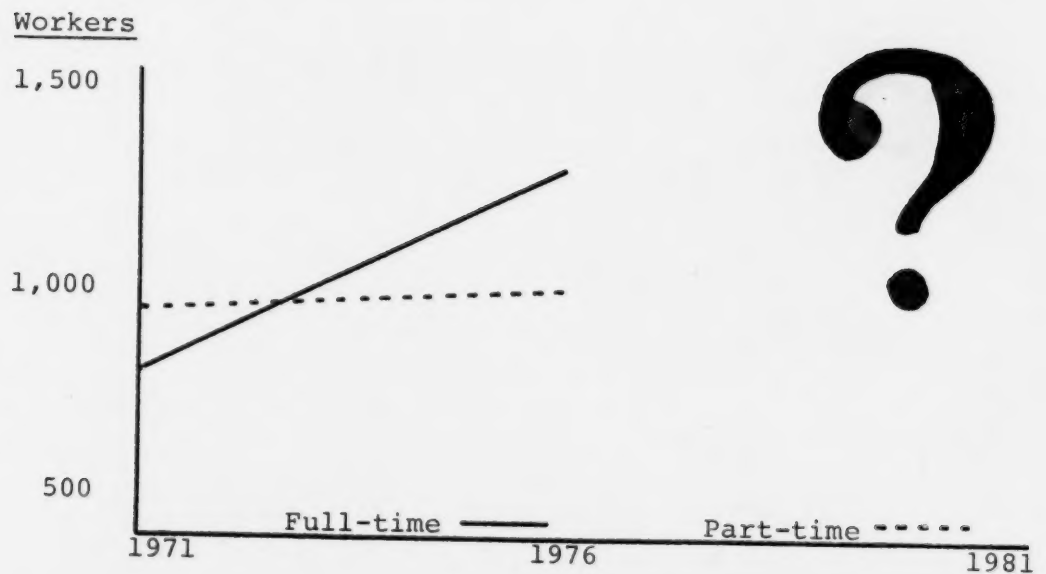
TABLE 4
EDUCATIONAL LEVELS DESIRED FOR NURSERY
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Agric. Equip. Oper.	9	22.2	66.7	22.2	22.2	0.0	0.0
Flower Grader	1	100.0	100.0	0.0	0.0	0.0	0.0
Flower Grower	2	50.0	100.0	50.0	0.0	0.0	0.0
Flower Handler	1	0.0	100.0	0.0	0.0	0.0	0.0
Greenhouse Worker	4	0.0	75.0	0.0	25.0	0.0	0.0
Groundskeeper	2	0.0	100.0	50.0	0.0	0.0	0.0
Heavy Equip. Oper.	1	0.0	0.0	0.0	100.0	0.0	0.0
Landscape Architect	5	0.0	0.0	0.0	0.0	40.0	60.0
Landscape Foreman	2	0.0	0.0	0.0	0.0	100.0	0.0
Landscape Gardener	7	0.0	71.4	14.2	28.5	14.2	0.0
Manager/Superintendent	15	0.0	33.3	13.3	6.6	26.6	40.0
Mechanic/Helper	10	0.0	30.0	20.0	60.0	0.0	0.0
Nursery Foreman	1	0.0	100.0	0.0	0.0	0.0	0.0
Nursery Worker	39	15.3	61.5	12.8	25.6	2.5	0.0
Packer/Shipper	1	0.0	100.0	0.0	0.0	0.0	0.0
Sales Clerk	7	0.0	85.7	28.5	0.0	0.0	0.0
Salesman	13	0.0	30.7	15.3	38.4	30.7	15.3
Skilled Land. Worker	2	0.0	50.0	0.0	50.0	0.0	0.0
Tree Pruner	3	0.0	66.7	33.3	0.0	33.3	0.0
Truck Driver	8	37.5	37.5	12.5	37.5	0.0	0.0
Unskilled Laborer	19	47.3	42.1	0.0	10.5	0.0	0.0

*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 5
SALARY CHARACTERISTICS FOR NURSERY
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Agric. Equip. Oper.	7	90	150 116	7	120	200 163
Floral Designer	1	100	100 100	1	150	150 150
Flower Handler	1	70	70 70	1	85	85 85
Greenhouse Worker	5	60	120 90	4	60	170 122
Groundskeeper	2	100	150 125	2	125	180 152
Heavy Equip. Oper.	1	200	200 200	1	400	400 400
Landscape Architect	3	150	350 226	3	225	350 291
Landscape Foreman	1	180	180 180	2	200	220 210
Landscape Gardener	6	70	125 89	6	110	200 143
Manager/Superintendent	14	125	350 184	11	165	350 247
Mechanic/Helper	9	100	160 123	9	145	280 196
Nursery Foreman	1	100	100 100	1	150	150 150
Nursery Worker	36	55	202 99	34	55	300 142
Packer/Shipper	1	150	150 150	1	170	170 170
Sales Clerk	8	70	120 90	8	75	125 105
Salesman	10	90	350 150	9	150	450 231
Skilled Land. Worker	1	160	160 160	1	160	160 160
Truck Driver	8	80	140 108	8	120	210 157
Unskilled Laborer	15	60	150 92	14	80	200 125

Nursery Dealers

Nursery dealers projected a 71.0% increase in full-time positions and a 3.5% increase in seasonal or part-time positions during the five-year period reported in Table 6. They indicated a need for 1,286 full-time workers in 1976 compared with 752 in 1971. The estimation for seasonal or part-time workers was 924 in 1976 compared with 893 in 1971. Recruitment needs for replacement and expansion during the five-year period included 636 full-time and 122 seasonal or part-time workers. It should be noted that these figures do not include the 25.9% of the businesses that were reported as family operated without any reference to job titles or 1976 projections.

Table 7 provides some indications of the educational levels

desired by employers for selected job titles. In combination with other business areas, it indicates a need for vocational, 2-year collegiate, 4-year collegiate, and short-term courses for many of the job titles in addition to the on-the-job training provided by employers.

Table 8 provides information on the 1971 salary characteristics for selected job titles. Although the data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. The seasonal or part-time work force included students and housewives in addition to those who find other jobs or are unemployed during the off-season. Seasonal housing was not provided and migrants were not part of the work force.

The employees' views of the future manpower situation included: (1) need for trained manpower; and (2) higher salaries.

TABLE 6

ESTIMATED EMPLOYMENT IN NURSERY DEALER BUSINESSES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Agric. Equip. Oper.	70	10	101	20	44.3	100.0
Floral Designer	10	0	20	0	100.0	0.0
Groundskeeper	20	0	70	30	250.0	Plus
Guides	0	30	0	0	0.0	-100.0
Landscape Architect	20	20	40	10	100.0	- 50.0
Landscape Gardener	131	80	181	141	38.2	76.3
Manager/Superintendent	121	0	141	0	16.5	0.0
Mechanic/Helper	30	0	60	0	100.0	0.0
Nursery Foreman	10	0	10	0	0.0	0.0
Nursery Worker	10	161	30	151	200.0	- 6.2
Nursery Worker (sales)	20	40	30	50	50.0	25.0
Owner	20	0	10	0	- 50.0	0.0
Packer/Shipper	0	30	10	30	Plus	0.0
Sales Clerk	10	50	20	50	100.0	0.0
Salesman	70	20	111	40	58.6	100.0
Tree Pruner	40	0	70	0	75.0	0.0
Tree Surgeon	10	0	30	0	200.0	0.0
Tree Surgeon Helper	10	0	40	0	300.0	0.0
Truck Driver	90	30	121	50	34.4	66.7
Unskilled Laborer	60	422	191	352	218.3	- 16.6
Total	752	893	1,286	924	71.0	3.5

TABLE 7

EDUCATIONAL LEVELS DESIRED FOR NURSERY DEALER
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Agric. Equip. Oper.	3	0.0	33.3	0.0	66.7	0.0	0.0
Floral Designer	1	0.0	100.0	100.0	0.0	0.0	0.0
Groundskeeper	1	0.0	0.0	0.0	100.0	0.0	0.0
Guide	1	0.0	100.0	0.0	0.0	0.0	0.0
Landscape Architect	3	0.0	0.0	33.3	0.0	0.0	66.7
Landscape Gardener	4	0.0	100.0	25.0	25.0	0.0	0.0
Manager/Superintendent	7	0.0	28.5	14.2	42.8	28.5	0.0
Mechanic/Helper	3	0.0	66.7	33.3	66.7	0.0	0.0
Nursery Foreman	1	0.0	0.0	0.0	0.0	100.0	0.0
Nursery Worker	4	0.0	50.0	25.0	25.0	0.0	0.0
Nursery Worker (sales)	1	0.0	100.0	0.0	0.0	0.0	0.0
Packer/Shipper	1	0.0	0.0	0.0	100.0	0.0	0.0
Sales Clerk	2	50.0	50.0	0.0	0.0	0.0	0.0
Salesman	4	0.0	25.0	0.0	25.0	25.0	50.0
Tree Pruner	2	0.0	50.0	0.0	50.0	0.0	0.0
Tree Surgeon	2	0.0	0.0	50.0	0.0	50.0	0.0
Tree Surgeon Helper	2	0.0	50.0	0.0	50.0	0.0	0.0
Truck Driver	4	0.0	75.0	25.0	0.0	0.0	0.0
Unskilled Laborer	3	0.0	66.7	0.0	33.3	0.0	0.0

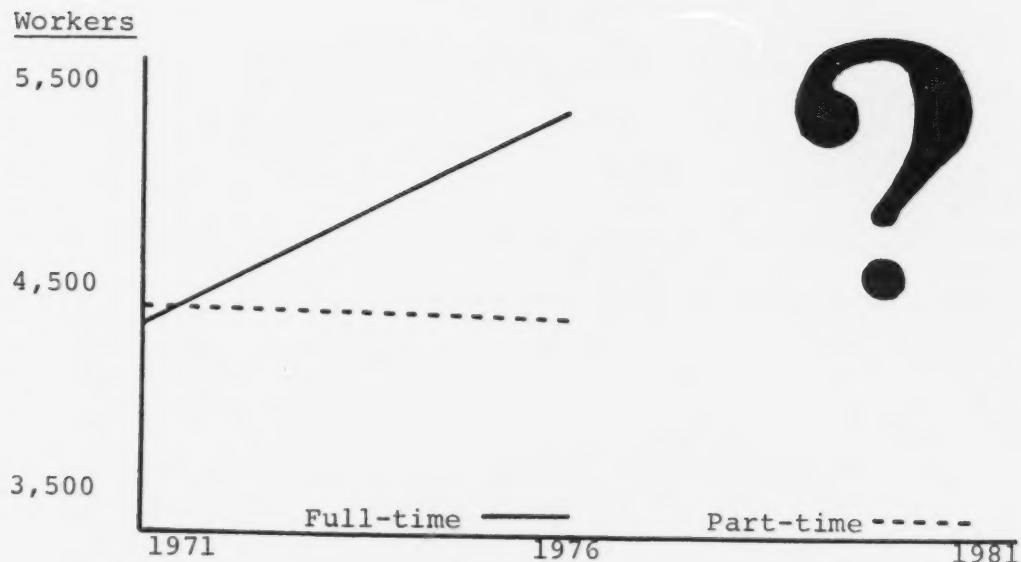
*May add to more than 100 percent since employees may have indicated more than one level for some jobs.

TABLE 8

SALARY CHARACTERISTICS FOR NURSERY DEALER
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Agric. Equip. Oper.	3	125	180 145	3	145	210 171
Floral Designer	1	100	100 100	1	150	150 150
Groundskeeper	2	120	125 122	2	140	160 150
Landscape Architect	4	135	170 151	4	150	250 200
Landscape Gardener	4	80	125 106	4	90	160 127
Manager/Superintendent	8	100	210 160	7	150	250 221
Mechanic/Helper	3	120	150 130	3	150	200 170
Nursery Foreman	1	150	150 150	1	185	185 185
Nursery Worker	4	120	160 137	4	150	200 170
Nursery Worker (sales)	1	150	150 150	1	150	150 150
Packer/Shipper	1	100	100 100	1	150	150 150
Sales Clerk	1	150	150 150	0	0	0 0
Salesman	5	100	175 143	5	150	250 204
Tree Pruner	2	120	135 127	2	145	160 152
Tree Surgeon	2	140	150 145	2	165	170 167
Tree Surgeon Helper	2	80	120 100	2	100	160 130
Truck Driver	7	75	160 121	6	100	200 155
Unskilled Laborer	5	70	150 111	4	100	180 150

Horticultural Services



Horticultural service businessmen projected a 22.0% increase in full-time positions and a 2.7% decrease in seasonal or part-time positions during the five-year period reported in Table 9. They indicated a need for 5,312 full-time workers in 1976 compared with 4,354 in 1971. The estimation for seasonal or part-time workers was 4,307 in 1976 compared with 4,426 in 1971. Recruitment needs for replacement and expansion during the five-year period included 1,441 full-time and 390 seasonal or part-time workers. A trend toward more highly skilled or specialized workers was indicated when the trend for all workers was compared with the respective 14.6% and 37.5% decreases in full-time and part-time unskilled laborers. It should be noted

that these figures do not include the 6.2% of the businesses that were reported as family operated without any reference to job titles or 1976 projections.

Table 10 provides some indications of the educational levels desired by employers for selected job titles. It indicates areas of need for vocational, 2-year collegiate, 4-year collegiate, and short-term courses for many of the job titles in addition to the on-the-job training provided by employers.

Table 11 provides information on the 1971 salary characteristics of selected job titles. Although the data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. They reported that 7.7% provided housing for seasonal employees, but none of the seasonal employees were migrants. A large number reported hiring students; off-season activities of other workers included other jobs and unemployment. Approximately 25% of the employers did not comment or did not know the off-season activities of their workers.

The employers' views of the future manpower situation in New Jersey included: (1) shortage of skilled labor; and (2) negative views toward the unemployment compensation and welfare situation. Fifteen expected the future manpower situation to be good while twenty-one expected it to be bad. Approximately 35% did not comment.

TABLE 9

ESTIMATED EMPLOYMENT IN HORTICULTURAL SERVICES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Agric. Equip. Oper.	189	340	274	341	45.0	0.3
Chemical Sprayer	30	28	50	38	66.7	35.7
Floral Designer	25	13	25	13	0.0	0.0
Greenskeeper	13	13	38	25	192.3	92.3
Groundskeeper	269	253	385	351	43.1	38.7
Heavy Equip. Oper.	0	12	0	0	0.0	-100.0
Insect Control Spec.	25	0	0	50	-100.0	Plus
Landscape Architect	115	13	165	13	43.5	0.0
Landscape Contractor	13	0	13	0	0.0	0.0
Landscape Foreman	81	0	106	0	30.9	0.0
Landscape Gardener	875	1118	1290	1408	54.3	25.9
Lawn Maint. Foreman	25	0	0	0	-100.0	0.0
Lawn Technician	75	63	138	88	84.0	39.7
Manager/Superintendent	220	22	278	38	26.4	72.7
Mechanic/Helper	15	70	23	107	53.3	52.9
Nursery Worker	180	252	205	239	13.9	5.2
Sales Clerk	0	30	0	5	0.0	- 83.3
Salesman	126	34	184	77	46.0	126.5
Shrub Pruning/Shaping	25	0	25	0	0.0	0.0
Skilled Land. Worker	13	100	38	113	192.3	13.0
Tree Foreman	125	0	138	0	10.4	0.0
Tree Pruner	850	103	883	100	3.9	- 2.9
Tree Surgeon	185	24	202	42	9.2	75.0
Tree Surgeon Helper	70	74	105	67	50.0	- 9.5

TABLE 9 (continued)

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Truck Driver	45	86		90	80		100.0	- 7.0
Unskilled Laborer	740	1778		632	1112		- 14.6	- 37.5
Weed Control Spec.	25	0		25	0		0.0	0.0
Total	4,354	4,426		5,312	4,307		22.0	- 2.7

TABLE 10
EDUCATIONAL LEVELS DESIRED FOR HORTICULTURAL
SERVICE OCCUPATIONS IN NEW JERSEY, 1971

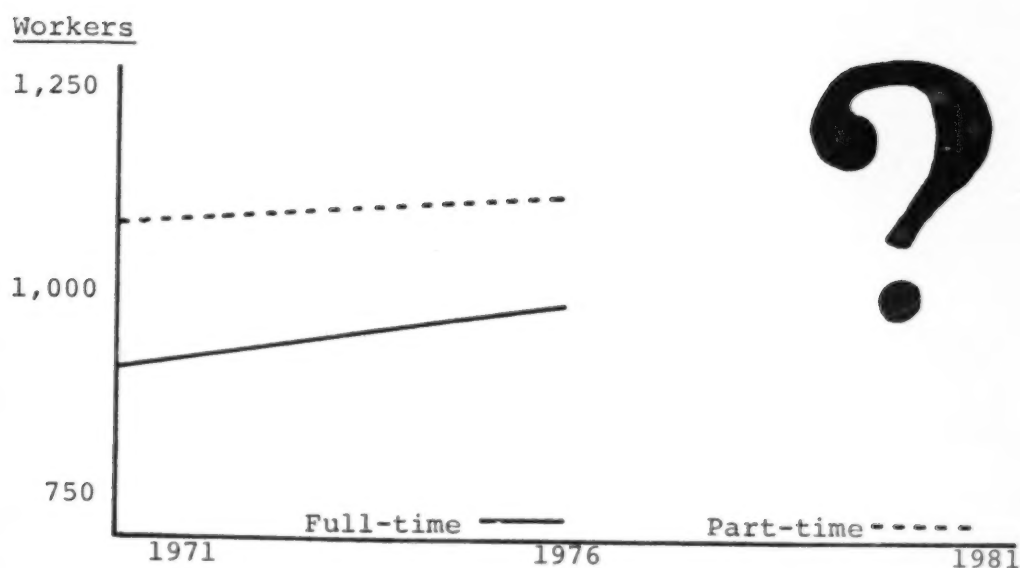
Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Agric. Equip. Oper.	21	0.0	80.9	14.2	28.5	0.0	0.0
Chemical Sprayer	1	0.0	100.0	0.0	0.0	0.0	0.0
Floral Designer	1	0.0	100.0	0.0	0.0	0.0	0.0
Greenskeeper	1	0.0	0.0	0.0	100.0	0.0	0.0
Groundskeeper	15	6.6	66.7	13.3	20.0	0.0	0.0
Landscape Architect	8	0.0	0.0	0.0	0.0	12.5	87.5
Landscape Contractor	1	0.0	100.0	100.0	100.0	0.0	0.0
Landscape Foreman	2	0.0	0.0	0.0	0.0	100.0	0.0
Landscape Gardener	47	2.1	61.7	17.0	23.4	10.6	4.2
Lawn Maint. Foreman	1	0.0	100.0	0.0	0.0	0.0	0.0
Lawn Technician	3	33.3	66.7	0.0	66.7	0.0	0.0
Manager/Superintendent	18	5.5	16.6	16.6	22.2	33.3	11.1
Mechanic/Helper	9	0.0	33.3	0.0	66.7	0.0	0.0
Nursery Worker	9	0.0	77.7	55.5	22.2	11.1	0.0
Sales Clerk	2	0.0	50.0	0.0	50.0	0.0	0.0
Salesman	10	0.0	50.0	0.0	10.0	60.0	0.0
Skilled Land. Worker	1	0.0	100.0	0.0	0.0	0.0	0.0
Tree Foreman	1	0.0	100.0	0.0	0.0	0.0	0.0
Tree Pruner	12	0.0	83.3	8.3	8.3	0.0	0.0
Tree Surgeon	10	0.0	80.3	30.0	20.0	0.0	0.0
Tree Surgeon Helper	6	16.6	83.3	0.0	16.6	0.0	0.0
Truck Driver	7	0.0	85.7	0.0	42.8	0.0	0.0
Unskilled Laborer	27	22.2	70.3	3.7	11.1	0.0	0.0

*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 11

SALARY CHARACTERISTICS FOR HORTICULTURAL SERVICE
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary				Potential Maximum Salary			
	No. of Employer Responses	Weekly (dollars)			No. of Employer Responses	Weekly (dollars)		
		Low	High	Mean		Low	High	Mean
Agric. Equip. Oper.	20	100	175	129	19	120	250	173
Chemical Sprayer	1	118	118	118	1	185	185	185
Floral Designer	1	70	70	70	1	80	80	80
Greenskeeper	1	120	120	120	1	130	130	130
Groundskeeper	15	80	160	112	15	100	200	147
Landscape Architect	9	120	250	173	8	180	300	242
Landscape Foreman	3	135	200	165	2	180	250	215
Landscape Gardener	45	72	200	114	40	75	250	161
Lawn Maint. Foreman	0	0	0	0	1	160	160	160
Lawn Technician	3	120	125	121	3	175	200	191
Manager/Superintendent	17	100	220	168	16	150	400	213
Mechanic/Helper	7	100	160	135	7	100	260	170
Nursery Worker	9	70	170	113	7	70	220	149
Sales Clerk	0	0	0	0	1	95	95	95
Salesman	9	100	200	149	8	140	350	251
Skilled Land. Worker	1	110	110	110	1	188	188	188
Tree Foreman	1	205	205	205	1	205	205	205
Tree Pruner	12	110	160	136	10	110	200	175
Tree Surgeon	9	110	150	133	8	160	210	181
Tree Surgeon Helper	8	90	130	111	6	130	210	158
Truck Driver	9	100	140	123	8	120	200	161
Unskilled Laborer	25	60	150	105	24	90	250	151

Golf Courses

Golf course employers projected a 13.5% increase in full-time positions and a 5.1% increase in part-time positions during the five-year period reported in Table 12. They indicated a need for 969 full-time workers in 1976 compared with 854 in 1971. The estimation for seasonal or part-time workers was 1,127 in 1976 compared with 1,072 in 1971. Recruitment needs for replacement and expansion during the five-year period included 206 full-time and 165 seasonal or part-time workers.

Table 13 provides some indications of the educational levels desired by employers for selected job titles. In combination with other business areas, it indicates a need for vocational, 2-year collegiate, 4-year collegiate, and short-term courses for many of the job titles in addition to the on-the-job

training provided by employers.

Table 14 provides information on the 1971 salary characteristics of selected job titles. Although the data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. The seasonal or part-time work force included students in addition to those who worked at other jobs or were unemployed during the off-season. They reported that 4.3% provided housing for seasonal employees and 4.3% employed migrants.

The employers' views of the future manpower situation in New Jersey included: (1) need trained manpower; (2) labor costs are increasing; (3) negative views toward the unemployment compensation and welfare situation; (4) poor outlook; and (5) manpower problems are increasing.

TABLE 12

ESTIMATED EMPLOYMENT IN GOLF COURSE BUSINESSES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Agric. Equip. Oper.	90	51		121	78		34.4	52.9
Asst.. Superintendent	9	0		9	0		0.0	0.0
Greenskeeper	218	354		208	294		- 4.6	- 16.9
Groundskeeper	231	280		280	210		21.2	- 25.0
Landscape Architect	0	9		0	9		0.0	0.0
Landscape Gardener	0	98		0	142		0.0	44.9
Manager/Suprintendent	107	4		113	0		5.6	-100.0
Mechanic/Helper	90	21		112	21		24.4	0.0
Nursery Worker	12	36		30	98		150.0	172.2
Sales Clerk	12	9		27	44		125.0	388.8
Unskilled Laborer	85	210		69	231		- 18.8	10.0
Total	854	1,072		969	1,127		13.5	5.1

TABLE 13
EDUCATIONAL LEVELS DESIRED FOR GOLF COURSE
OCCUPATIONS IN NEW JERSEY, 1971

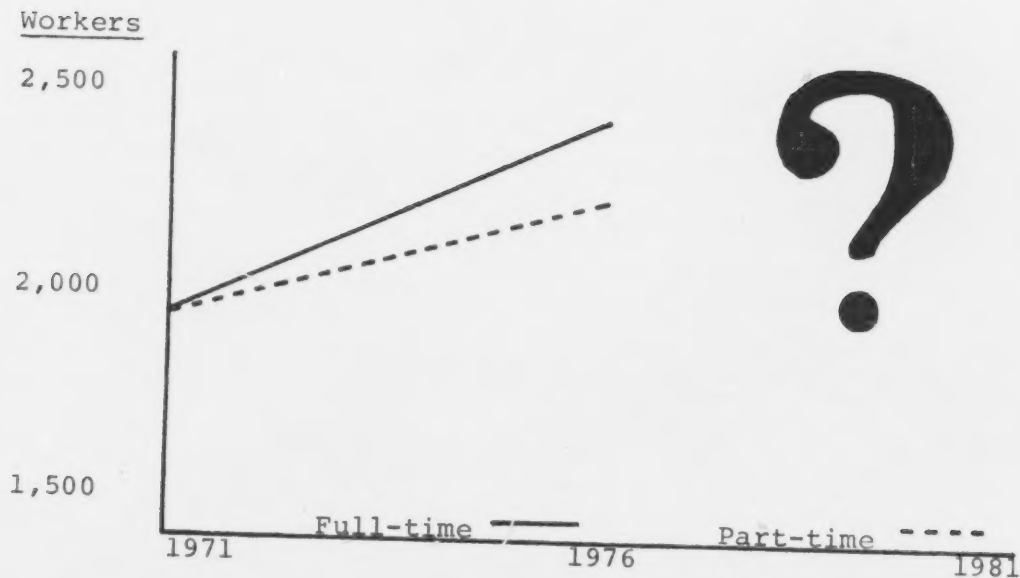
Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Agric. Equip. Oper.	6	0.0	33.3	0.0	66.7	0.0	0.0
Asst. Superintendent	1	0.0	0.0	100.0	0.0	0.0	0.0
Greenskeeper	13	0.0	53.8	30.7	23.0	15.3	0.0
Groundskeeper	15	0.0	80.0	6.6	20.0	0.0	0.0
Landscape Architect	1	0.0	0.0	0.0	0.0	0.0	100.0
Landscape Gardener	2	0.0	50.0	0.0	50.0	0.0	0.0
Manager/Superintendent	9	0.0	11.1	22.2	11.1	11.1	44.4
Mechanic/Helper	12	0.0	41.6	8.3	58.3	8.3	0.0
Nursery Worker	2	0.0	50.0	50.0	100.0	0.0	0.0
Sales Clerk	1	0.0	0.0	0.0	100.0	0.0	0.0
Unskilled Laborer	7	28.5	57.1	0.0	14.2	0.0	0.0

*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 14

SALARY CHARACTERISTICS FOR GOLF COURSE
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Agric. Equip. Oper.	5	75	140	100	100	168 116
Asst. Superintendent	1	115	115	115	160	160 160
Greenskeeper	15	80	225	127	100	275 160
Groundskeeper	15	60	145	101	100	180 125
Landscape Gardener	1	84	84	84	110	110 110
Manager/Superintendent	11	100	277	201	100	327 235
Mechanic/Helper	10	60	173	120	60	203 150
Nursery Worker	2	60	86	73	100	110 105
Sales Clerk	2	80	120	100	100	100 100
Unskilled Laborer	5	60	100	85	80	125 107

Florists

Florists projected a 20.3% increase in full-time positions and a 11.7% increase in part-time positions during the five-year period reported in Table 15. They indicated a need for 2,343 full-time workers in 1976 compared with 1,947 in 1971. The estimation for seasonal or part-time workers was 2,171 in 1976 compared with 1,943 in 1971. Recruitment needs for replacement and expansion during the five-year period included 611 full-time and 434 seasonal or part-time workers. Other data suggest that the number of florists is underestimated because a large number of these businesses have payrolls of less than \$1,000 per year.

Table 16 provides some indications of the educational levels desired by employers for selected job titles. In combination with

other business areas, it indicates a need for vocational, 2-year collegiate, 4-year collegiate, and short-term courses for many of the job titles in addition to the on-the-job training provided by employers.

Table 17 provides information on the 1971 salary characteristics for selected job titles. Although the data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. The seasonal or part-time work force included students, housewives, and retirees in addition to those who found other jobs during the off-season. Approximately one half of the employers did not comment or did not know what their employees did during the off-season. None of the employers reported hiring migrants, but 4.6% did provide housing for seasonal employees.

The employers' views on the future manpower situation in New Jersey included: (1) need for more skilled labor; (2) depends on growth of the industry; (3) negative views toward the unemployment compensation and welfare situation; and (4) unable to pay good wages.

TABLE 15
ESTIMATED EMPLOYMENT IN FLORIST BUSINESSES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Floral Designer	1156	625		1196	862		3.5	37.9
Floral Delivery	0	12		0	12		0.0	0.0
Florist	9	0		0	0		-100.0	0.0
Flower Grower	12	24		24	24		100.0	0.0
Groundskeeper	12	0		12	0		0.0	0.0
Manager/Supervisor	45	12		76	24		68.9	100.0
Mechanic/Helper	12	12		12	12		0.0	0.0
Sales Clerk	317	431		519	365		63.7	- 15.3
Salesman	24	12		83	24		245.8	100.0
Truck Driver	322	803		381	836		18.3	4.1
Unskilled Laborer	38	12		40	12		5.3	0.0
Total	1,947	1,943		2,343	2,171		20.3	11.7

TABLE 16

EDUCATIONAL LEVELS DESIRED FOR FLORIST
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Floral Deliveryman	1	100.0	0.0	0.0	0.0	0.0	0.0
Floral Designer	34	0.0	73.5	38.2	14.7	2.9	0.0
Flower Grower	1	0.0	100.0	100.0	0.0	0.0	0.0
Groundskeeper	1	0.0	100.0	0.0	0.0	0.0	0.0
Manager/Supervisor	5	0.0	20.0	20.0	0.0	60.0	20.0
Sales Clerk	15	6.6	60.0	20.0	20.0	0.0	0.0
Salesman	2	0.0	50.0	100.0	0.0	50.0	0.0
Truck Driver	22	13.6	77.2	9.0	18.1	0.0	0.0
Unskilled Laborer	3	0.0	100.0	0.0	0.0	0.0	0.0

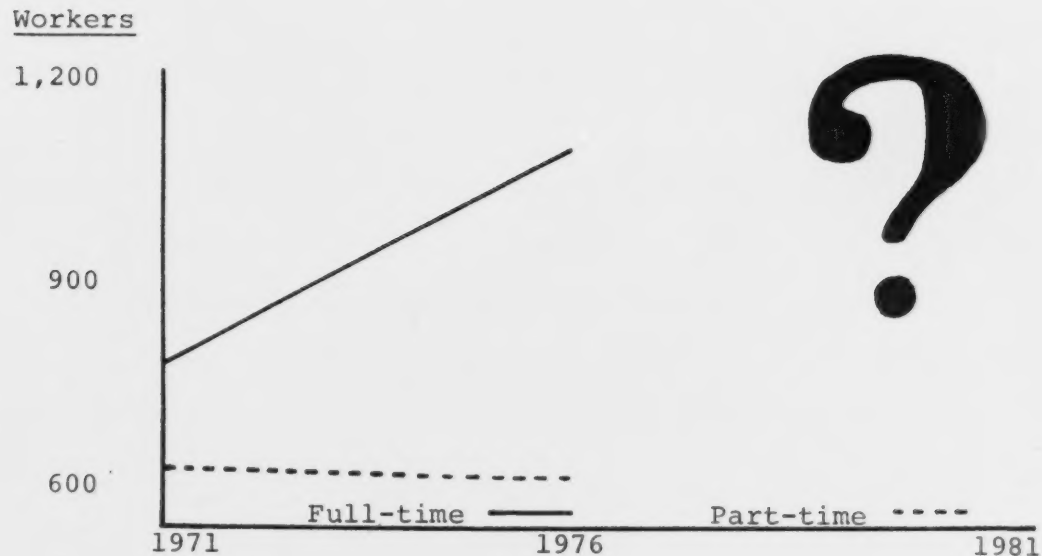
*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 17

SALARY CHARACTERISTICS FOR FLORIST
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary				Potential Maximum Salary			
	No. of Employer Responses	Weekly (dollars)			No. of Employer Responses	Weekly (dollars)		
		Low	High	Mean		Low	High	Mean
Floral Designer	34	60	150	94	34	80	250	158
Flower Grower	1	70	70	70	1	150	150	150
Groundskeeper	1	160	160	160	1	180	180	180
Manager/Superintendent	2	100	115	107	2	150	200	175
Mechanic/Helper	1	80	80	80	1	100	100	100
Sales Clerk	16	60	110	80	16	85	150	110
Salesman	1	90	90	90	1	120	120	120
Truck Driver	22	60	130	89	21	80	165	121
Unskilled Laborer	3	65	100	80	4	85	100	93

Farm and Garden Supply



Farm and garden supply businessmen projected a 42.0% increase in full-time positions and a 4.3% decrease in seasonal or part-time positions during the five-year period reported in Table 18. They indicated a need for 1,096 full-time workers in 1976 compared to 772 in 1971. The estimation for seasonal or part-time workers was 608 in 1976 compared with 635 in 1971. Recruitment needs for replacement and expansion during the five-year period included 417 full-time and 35 seasonal or part-time workers. It should be noted that these figures do not include the 3.6% of the businesses that were reported as family operated without any reference to job titles or 1976 projections.

Table 19 provides some indications of the educational levels

desired by employers for selected job titles. In combination with other business areas, it indicates a need for vocational, 2-year collegiate, 4-year collegiate, and short-term courses for many of the job titles in addition to the on-the-job training provided employers.

Table 20 provides information on the 1971 salary characteristics of selected job titles. Although the data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. This part of their work force included students, housewives, and retirees in addition to those who find other jobs or are unemployed during the off-season. Seasonal housing was not provided and migrants were not part of the work force.

The employers' views of the future manpower situation in New Jersey included: (1) lack of trained manpower; (2) wages were too high; and (3) future outlook is poor. The majority did not comment.

TABLE 18
ESTIMATED EMPLOYMENT IN FARM AND GARDEN SUPPLY
BUSINESSES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Agric. Equip. Oper.	46	7		58	0		26.1	-100.0
Equip. Set-Up Man	8	6		2	0		- 75.0	-100.0
Feed Mixer	14	0		14	0		0.0	0.0
Foreman	35	0		42	0		20.0	0.0
Greenhouse Worker	7	0		0	0		-100.0	0.0
Landscape Architect	7	7		0	0		-100.0	-100.0
Landscape Foreman	14	0		27	0		92.9	0.0
Manager	52	39		60	0		15.4	-100.0
Mechanic	27	7		48	7		77.8	0.0
Nurseryman	14	27		34	61		142.9	125.9
Nursery Worker	54	162		102	251		88.9	54.9
Partsman	28	7		21	7		- 25.0	0.0
Plant Man	14	7		20	41		42.9	485.7
Sales Clerk	62	174		83	134		33.9	- 23.0
Salesman	117	26		177	7		51.3	- 73.1
Skilled Land. Worker	0	24		12	12		Plus	- 50.0
Small Engine Mechanic	20	7		27	0		35.0	-100.0
Truck Driver	162	40		238	27		46.9	- 32.5
Truck Driver (Warehouse)	20	0		20	0		0.0	0.0
Unskilled Laborer	17	68		29	7		70.6	- 89.7
Warehouseman	54	27		82	54		51.9	100.0
Total	772	635		1,096	608		42.0	- 4.3

TABLE 19

EDUCATIONAL LEVELS DESIRED FOR FARM AND GARDEN
SUPPLY OCCUPATIONS IN NEW JERSEY, 1971

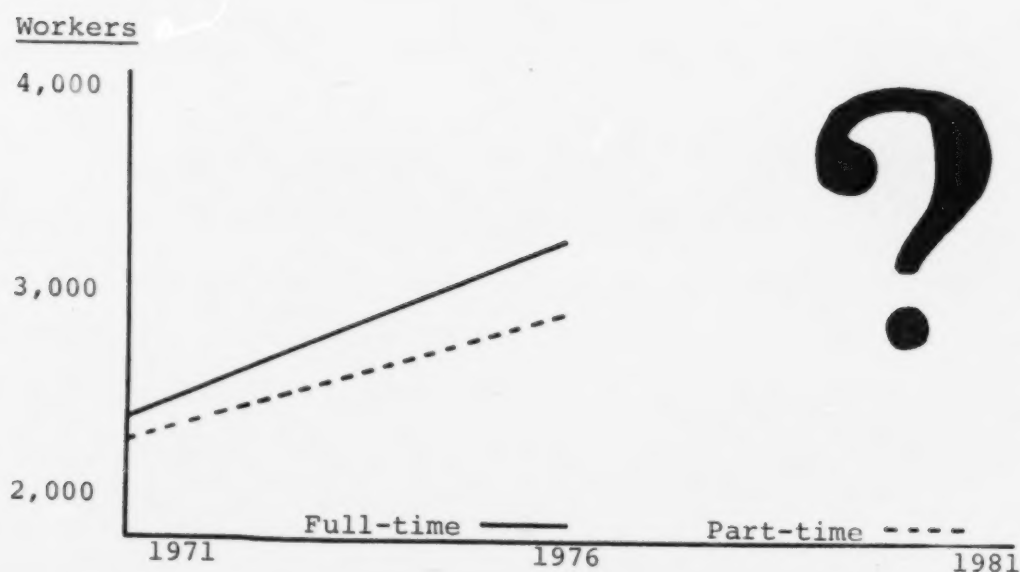
Percent of Employers Specifying Each Educational Level*							
Job Titles	No. of Employer Responses	None	On-The-Job	Short Courses	High School Vocational	2-Year College	4-Year College
Agric. Equip. Oper.	3	0.0	100.0	0.0	0.0	0.0	0.0
Equip. Set-Up Man	2	0.0	50.0	50.0	0.0	0.0	0.0
Feed Mixer	1	0.0	100.0	0.0	0.0	0.0	0.0
Foreman	5	0.0	40.0	0.0	40.0	20.0	0.0
Greenhouse Worker	1	0.0	100.0	0.0	0.0	0.0	0.0
Landscape Architect	1	0.0	0.0	0.0	0.0	0.0	100.0
Landscape Foreman	1	0.0	0.0	0.0	0.0	100.0	0.0
Manager	8	0.0	0.0	25.0	25.0	50.0	25.0
Mechanic	2	0.0	50.0	0.0	50.0	0.0	0.0
Nurseryman	3	0.0	0.0	0.0	33.3	66.7	0.0
Nursery Worker	4	0.0	25.0	0.0	75.0	0.0	0.0
Partsman	3	33.3	33.3	0.0	66.7	0.0	0.0
Plant Man	1	0.0	0.0	0.0	0.0	100.0	0.0
Sales Clerk	9	11.1	33.3	22.2	44.4	33.3	0.0
Salesman	8	0.0	37.5	0.0	62.5	12.5	0.0
Small Engine Mechanic	1	0.0	100.0	0.0	0.0	0.0	0.0
Skilled Land. Worker	1	0.0	0.0	0.0	100.0	0.0	0.0
Truck Driver	10	10.0	60.0	0.0	20.0	10.0	0.0
Truck Driver (Warehouse)	1	0.0	100.0	0.0	0.0	0.0	0.0
Unskilled Laborer	5	20.0	60.0	0.0	20.0	0.0	0.0
Warehouseman	3	0.0	100.0	33.3	0.0	0.0	33.3

*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 20
SALARY CHARACTERISTICS FOR FARM AND GARDEN
SUPPLY OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Agric. Equip. Oper.	3	129	150	130	150	180
Equip. Set-Up Man	2	100	120	110	150	160
Feed Mixer	1	100	100	100	130	130
Foreman	4	116	130	125	142	198
Landscape Foreman	1	150	150	150	175	175
Manager	8	115	200	157	125	300
Mechanic	1	100	100	100	150	150
Nurseryman	3	100	150	125	150	175
Nursery Worker	3	80	150	106	88	90
Partsman	4	88	110	99	100	150
Plant Man	1	125	125	125	150	150
Sales Clerk	8	65	150	118	65	200
Salesman	8	100	150	125	142	300
Skilled Land. Foreman	1	100	100	100	150	150
Small Engine Mechanic	2	165	175	170	185	185
Truck Driver	11	80	175	118	130	200
Truck Driver (Warehouse)	1	90	90	90	125	125
Unskilled Laborer	5	75	110	97	95	150
Warehouseman	3	110	250	160	175	200

IV. NATURAL RESOURCE BUSINESSES AND GOVERNMENTAL SERVICES



The projected trend for people with skills and knowledge in natural resource businesses and governmental services indicated greater demand for both full-time and seasonal or part-time workers for the five-year period from 1971 to 1976. The projections in Table 21 combine the areas of sporting and recreational businesses, water supply and sewage businesses, municipal and county governmental services, and state and federal governmental services. A 29.3% increase in full-time positions from 2,387 to 3,086 in 1976 was projected. Seasonal or part-time positions are expected to increase 15.7% from 2,298 workers in 1971 to 2,659 in 1976. Considering a 2% annual replacement rate due to retirement and other factors, 973 people will have

to be recruited and trained for the 699 new positions and 274 replacement positions. The seasonal or part-time needs of 609 people included 361 new positions and 248 replacement positions.

A more detailed analysis of the trends in natural resource businesses and governmental services is available on the following pages. Table 21 provides a composite analysis of the manpower trends in these occupations by job title. The subsections for sporting and recreational businesses, water supply and sewage businesses, municipal and county governmental services, and state and federal governmental services provide trends for manpower needs, educational levels desired by employers, and salary characteristics for the state-wide situation in New Jersey.

TABLE 21

ESTIMATED EMPLOYMENT IN NATURAL RESOURCE AND GOVERNMENTAL SERVICES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Agric. Equip. Oper.	4	0	4	0	0.0	0.0
Agric. & Envir. Sci. Res. Teach., Ext., & Admin.	342	0	376	0	10.0	0.0
Agric. Economist	2	0	2	0	0.0	0.0
Agric. Marketing Spec.	3	0	3	0	0.0	0.0
Air Pollution Insp.	9	0	11	0	22.2	0.0
Air Pollution Spec.	0	9	3	6	Plus	- 33.3
Analyst, Agric.	2	0	1	0	- 50.0	0.0
Anim. & Pl. Health Super.	2	0	2	0	0.0	0.0
Animal Science Tech.	10	0	11	0	10.0	0.0
Bacteriologist	1	0	1	0	0.0	0.0
Biochem. & Micro. Tech.	5	0	6	0	20.0	0.0
Bio. & Lab. Technician	1	0	1	0	0.0	0.0
Bio. & Agric. Eng. Tech.	1	0	1	0	0.0	0.0
Biologist	7	1	11	2	57.1	100.0
Bureau Chief, Agric.	8	0	8	0	0.0	0.0
Camp Attendant	0	139	0	216	0.0	55.4
Camp Director	19	30	19	41	0.0	36.7
Camp Maintenance	19	0	19	0	0.0	0.0
Campground Caretaker	8	65	11	69	37.5	6.2
Campground Manager	4	0	8	0	100.0	0.0
Chemist	6	0	12	2	100.0	Plus
Chief, Engineer, Water	5	2	5	0	0.0	-100.0
Chlorine Station Oper.	20	0	0	0	-100.0	0.0
Computer Prog., Agric.	1	0	1	0	0.0	0.0
Conservation Officer	41	0	43	0	4.9	0.0

TABLE 21 (continued)

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Coordinator, Agric.	6	1	9	0	50.0	-100.0
Counselor	39	1243	54	1598	38.5	28.6
Dairymen	9	0	60	0	566.7	0.0
Dairymen, Head	6	0	7	0	16.7	0.0
Deputy Director, Agric.	3	0	3	0	0.0	0.0
Director, Public Works	6	0	6	0	0.0	0.0
Division Director, Agric.	8	0	8	0	0.0	0.0
Entomologist	4	1	4	1	0.0	0.0
Entomology Technician	3	0	3	0	0.0	0.0
Enumerator, Agric.	0	24	0	24	0.0	0.0
Environmental Aide	0	0	5	0	Plus	0.0
Envir. Engineer	48	12	67	15	39.6	25.0
Envir. Eng. Aide	2	0	3	0	50.0	0.0
Envir. Field Worker	15	0	25	0	66.7	0.0
Envir. Physiology Tech.	2	0	2	0	0.0	0.0
Envir. Program Spec.	0	0	1	0	Plus	0.0
Envir. Protection Spec.	3	0	0	3	-100.0	Plus
Envir. Science Instr.	0	34	0	68	100.0	100.0
Envir. Science Tech.	4	0	4	0	0.0	0.0
Envir. Specialist	4	0	4	0	0.0	0.0
Envir. Technician	0	0	10	4	Plus	Plus
Farm Supervisor	7	0	7	0	0.0	0.0
Farmer	16	0	26	0	62.5	0.0
Farmer, Assistant	6	0	26	0	333.3	0.0
Farmer, Head	8	0	8	0	0.0	0.0
Fisheries Biologist	10	15	10	16	0.0	6.7
Food Science Tech.	2	0	2	0	0.0	0.0

TABLE 21 (continued)

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Foreman, Sewage System	12	0	12	0	0.0	0.0
Foreman, Water Supply	12	0	12	2	0.0	Plus
Forester	22	0	28	0	27.3	0.0
Gardener	2	0	6	0	400.0	0.0
General Duties	2	0	2	0	0.0	0.0
Geologist	9	5	12	7	33.3	40.0
Greenhouseman, Asst.	2	0	2	0	0.0	0.0
Greenhouseman, Head	1	0	1	0	0.0	0.0
Greenskeeper	0	0	4	0	Plus	0.0
Groundman (tree)	6	11	9	11	50.0	0.0
Groundsman	34	0	50	0	47.1	0.0
Groundsman, Assistant	36	0	40	0	11.1	0.0
Groundsman, Head	12	0	12	0	0.0	0.0
Head Counselor	0	2	0	2	0.0	0.0
Health Officer	11	11	17	6	54.5	- 45.5
Horticulture Tech.	9	0	10	0	11.1	0.0
Hunt./Fish. Guide	0	8	0	15	0.0	87.5
Industrial Hygienist	3	0	3	3	0.0	Plus
Inspector, Agric.	16	101	59	42	268.7	- 58.4
Inspector, Asst. (agric.)	0	34	0	34	0.0	0.0
Insp. (Fixtures/House)	0	2	0	2	0.0	0.0
Insp., Livestock & Inv.	3	0	3	0	0.0	0.0
Insp., Senior (agric.)	30	14	46	0	53.3	-100.0
Insp., Super. (agric.)	3	5	8	0	166.7	-100.0
Lab. &/or Insp. Chief	3	0	3	0	0.0	0.0
Lab. Asst. & Serv. Worker	5	12	4	4	- 20.0	- 66.7
Lab. Technician	4	3	4	2	0.0	- 50.0

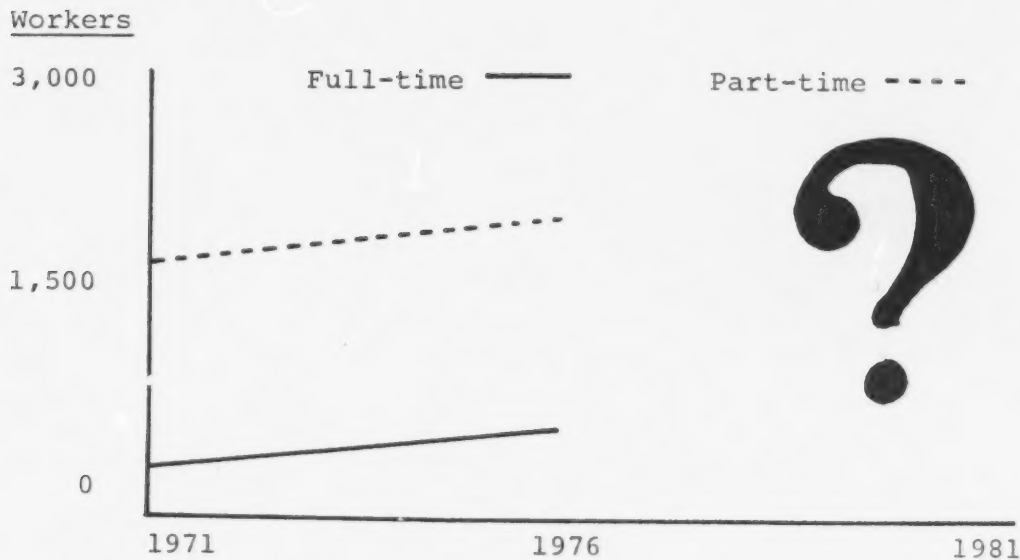
TABLE 21 (continued)

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Lab. Tech. Asst.	0	10	9	25	Plus	150.0
Land. Hwy. Maint. Fore.	15	0	29	0	33.3	0.0
Land. Maint. Super.	2	0	3	0	50.0	0.0
Marketing Rep., Agric.	5	0	5	0	0.0	0.0
Marine Biologist	2	0	8	0	300.0	0.0
Meat Inspector	3	0	3	0	0.0	0.0
Mechanic	5	0	9	0	80.0	0.0
Meter Installer	15	2	27	0	80.0	-100.0
Meter Reader	20	2	34	0	70.0	-100.0
Misc. Agric.	3	0	3	0	0.0	0.0
Nature Counselor	0	27	0	8	0.0	- 70.4
Nutrition Technician	2	0	2	0	0.0	0.0
Oyster Technician	5	0	6	0	20.0	0.0
Park Groundsman	369	207	482	224	30.6	8.2
Park Supt./Foreman	142	23	119	23	- 16.2	0.0
Picnic Pack Attendant	4	16	4	16	0.0	0.0
Plant Protect. Sup.	2	0	2	0	0.0	0.0
Poultryman, Head	1	0	1	0	0.0	0.0
Proced. Analyst	1	0	2	0	100.0	0.0
Public Health Engineer	6	0	6	0	0.0	0.0
Public Info. Asst.	1	1	2	0	100.0	-100.0
Pump Station Operator	47	0	44	0	- 8.5	0.0
Sanitarian	79	79	134	42	69.6	- 46.8
Sanitarian Trainee	6	3	60	11	900.0	266.7
Sanitary Engineer	20	9	17	3	- 15.0	- 66.7
Sanitary Inspector	48	6	91	3	89.6	- 50.0
Sanitary Technician	0	0	3	0	Plus	0.0

TABLE 21 (continued)

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Seed Analyst	3	0	3	0	0.0	0.0
Sr. Air Pollution Insp.	3	0	3	0	0.0	0.0
Sewage Plant Operator	151	29	169	20	11.9	- 31.0
Soil Conser. Spec.	3	0	3	0	0.0	0.0
Soils & Crops Tech.	5	0	5	0	0.0	0.0
Solid Waste Spec.	17	9	28	6	64.7	- 33.3
Statistician	3	0	3	0	0.0	0.0
Statistician, Asst.	1	0	1	0	0.0	0.0
Superintendent	24	5	19	2	- 20.8	- 60.0
Supt., Inst. Grounds	4	0	4	0	0.0	0.0
Supervisor, Agric.	10	5	12	0	20.0	-100.0
Super., Asst. (agric.)	1	0	1	0	0.0	0.0
Swimming Instr.	0	4	0	4	0.0	0.0
Tree Climber	17	0	28	0	64.7	0.0
Tree Foreman	6	0	6	0	0.0	0.0
Truck Driver	4	8	4	15	0.0	87.5
Unskilled Laborer	129	15	131	17	1.6	13.3
Veterinarian	5	4	5	0	0.0	-100.0
Vet. Med. Officer	6	0	6	0	0.0	0.0
Water Engineer	0	3	0	3	0.0	0.0
Water Plant Operator	5	3	14	0	180.0	-100.0
Water Resources Eng.	23	3	30	5	30.4	66.7
Water-Sewage Supt.	6	0	3	0	- 50.0	0.0
Water Superintendent	3	0	0	0	-100.0	0.0
Water Treatmt. Pl. Oper.	27	2	41	0	51.9	-100.0
Waterworks Asst.	82	20	116	17	41.5	- 15.0
Weights & Measure Insp.	68	3	85	3	25.0	0.0
Wildlife Biologist	10	16	10	17	0.0	6.3
Total	2,387	2,298	3,086	2,659	29.3	15.7

Sporting and Recreational



Sporting and recreational employers projected a 29.7% increase in full-time employment and a 30.4% increase in seasonal or part-time employment during the five-year period reported in Table 22. Closer inspection of the data shows that the bulk of employment in this area is for seasonal or part-time workers. They indicated a need for 131 full-time workers in 1976 compared with 101 in 1971. The estimations for seasonal or part-time workers was for 2,052 in 1976 compared with 1,576 in 1971. Recruitment needs for replacement and expansion included 42 full-time workers and 657 seasonal or part-time workers.

Table 23 provides some indications of the educational levels desired by employers for selected job titles. Most of the educational needs of this group would be provided by educational

programs that include more than the sporting and recreational subject matter.

Table 24 provides information on the 1971 salary characteristics of selected job titles. Although data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. Several employers reported housing seasonal or part-time employees. Most of the employees in this category were students; some were teachers or held other jobs during the remainder of the year.

The employers' views of the future employment situation for New Jersey were generally optimistic. They indicated a need for competent employees.

TABLE 22
ESTIMATED EMPLOYMENT IN SPORTING AND RECREATION
BUSINESSES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Agric. Equip. Oper.	4	0		4	0		0.0	0.0
Camp Attendant	0	139		0	216		0.0	55.4
Camp Director	19	30		19	41		0.0	36.7
Camp Maintenance	19	0		19	0		0.0	0.0
Campground Caretaker	8	65		11	69		37.5	6.2
Campground Manager	4	0		8	0		100.0	0.0
Counselor	39	1243		54	1598		38.5	28.6
Envir. Science Instr.	0	34		0	68		0.0	100.0
Greenskeeper	0	0		4	0		Plus	0.0
Head Counselor	0	2		0	2		0.0	0.0
Hunt./Fish. Guide	0	8		0	15		0.0	87.5
Mechanic	0	0		4	0		Plus	0.0
Nature Counselor	0	27		0	8		0.0	- 70.4
Picnic Pack Attendant	4	16		4	16		0.0	0.0
Swimming Instructor	0	4		0	4		0.0	0.0
Truck Driver	4	8		4	15		0.0	87.5
Total	101	1,576		131	2,052		29.7	30.4

TABLE 23

EDUCATIONAL LEVELS DESIRED FOR SPORTING AND
RECREATIONAL OCCUPATIONS IN NEW JERSEY, 1971

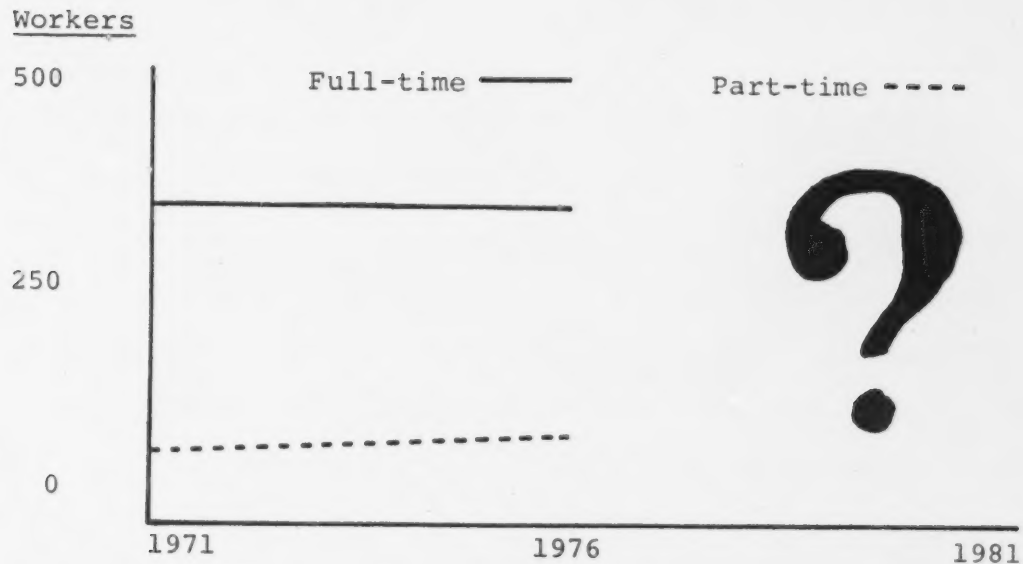
Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Agric. Equip. Oper.	1	0.0	0.0	0.0	100.0	0.0	0.0
Camp Attendant	1	0.0	0.0	0.0	100.0	0.0	0.0
Camp Director	5	0.0	0.0	0.0	0.0	0.0	100.0
Camp Ground Caretaker	6	0.0	50.0	0.0	66.6	0.0	0.0
Camp Maintenance	1	0.0	100.0	0.0	0.0	0.0	0.0
Campground Man	1	0.0	0.0	0.0	100.0	0.0	0.0
Counselor	10	10.0	0.0	0.0	10.0	60.0	60.0
Envir. Science Instr.	3	0.0	0.0	0.0	0.0	0.0	100.0
Greenskeeper	1	0.0	0.0	0.0	100.0	0.0	0.0
Mechanic	1	0.0	0.0	0.0	100.0	0.0	0.0
Nature Counselor	1	0.0	0.0	100.0	0.0	0.0	0.0
Picnic Pack Attendant	1	0.0	100.0	0.0	0.0	0.0	0.0
Swimming Instructor	1	0.0	0.0	100.0	0.0	0.0	0.0
Truck Driver	1	0.0	0.0	0.0	100.0	0.0	0.0

*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 24

SALARY CHARACTERISTICS FOR SPORTING AND RECREATIONAL
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary				Potential Maximum Salary			
	No. of Employer Responses	Weekly (dollars)			No. of Employer Responses	Weekly (dollars)		
		Low	High	Mean		Low	High	Mean
Agric. Equip. Oper.	1	150	150	150	1	150	150	150
Camp Attendant	1	100	100	100	1	100	100	100
Camp Director	5	80	300	182	5	150	300	245
Campground Caretaker	4	80	200	126	4	50	200	135
Camp Maintenance	1	100	100	100	1	100	100	100
Counselors	1	85	85	85	1	150	150	150
Envir. Science Instr.	3	90	225	138	3	90	225	155
Head Counselor	1	85	85	85	1	150	150	150
Nature Counselor	1	50	50	50	1	50	50	50
Picnic Pack Attendant	1	60	60	60	1	60	60	60
Swimming Instructor	1	100	100	100	1	120	120	120
Truck Driver	1	150	150	150	1	150	150	150

Water Supply and Sewage

Water supply and sewage employers (not including municipal, county, or other governmental agencies) projected a 0.9% decrease in full-time employment and a 16.7% decrease in seasonal or part-time employment for the five-year period in Table 25. Actually an analysis of the data would indicate that this area is relatively stable. They estimated 341 full-time workers in 1976 compared with 344 in 1971. The seasonal or part-time estimation was for 25 workers in 1976 compared with 30 in 1971. The recruitment needs for replacement was 40 full-time workers; there would be a surplus of 2 seasonal or part-time workers.

Table 26 provides some indications of the educational levels desired by employers for selected job titles. The data indicate a need for short courses and some high school vocational program graduates in addition to on-the-job training provided by employers.

Table 27 provides information on the 1971 salary characteristics of selected job titles. Although data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

Very little information was available on the seasonal or part-time employment situation because of the small number of employees involved.

Employers' views on the future manpower situation in New Jersey included: (1) lack of skilled workers; (2) workers want white collar jobs; and (3) it depends on the growth of industry. Approximately one-half of the employers did not comment.

TABLE 25
ESTIMATED EMPLOYMENT IN WATER SUPPLY AND SEWAGE
BUSINESSES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Asst. Pump Station Oper.	15	0		15	0		0.0	0.0
Asst. Sewage Plant Oper.	2	0		2	0		0.0	0.0
Chemist, Water Purif.	0	0		0	2		0.0	Plus
Chief Engineer, Water	5	2		5	0		0.0	-100.0
Chlorine Station Oper.	20	0		0	0		-100.0	0.0
Foreman, Sewage System	12	0		12	0		0.0	0.0
Foreman, Water Supply	12	0		12	2		0.0	Plus
General Duties	2	0		2	0		0.0	0.0
Insp. (Fixtures in House)	0	2		0	2		0.0	0.0
Mechanic	5	0		5	0		0.0	0.0
Meter Installer	15	2		27	0		80.0	-100.0
Meter Reader	20	2		34	0		70.0	-100.0
Pump Station Operator	32	0		29	0		- 9.4	0.0
Sewage Plant Operator	24	0		7	0		- 70.8	0.0
Superintendent	24	5		19	2		- 20.8	- 60.0
Unskilled Laborer	129	15		131	17		1.6	13.3
Water Tretmt. Pl. Oper.	27	2		41	0		51.9	-100.0
Total	344	30		341	25		- .9	- 16.7

TABLE 26

EDUCATIONAL LEVELS DESIRED FOR WATER SUPPLY AND
SEWAGE OCCUPATIONS IN NEW JERSEY, 1971

Percent of Employers Specifying Each Educational Level *							
Job Titles	No. of Employer Responses	None	On-the- Job	Short Courses	High School		4-Year College
					Vocational	College	
Asst. Pump Station Oper.	1	100.0	0.0	0.0	0.0	0.0	0.0
Asst. Sewage Plant Oper.	1	0.0	0.0	0.0	100.0	0.0	0.0
Chemist, Water Purif.	1	0.0	0.0	100.0	0.0	0.0	0.0
Chief Engineer, Water	2	50.0	50.0	0.0	0.0	0.0	50.0
Chlorine Station Oper.	1	0.0	100.0	0.0	0.0	0.0	0.0
Foreman, Sewage System	3	0.0	100.0	33.3	0.0	0.0	0.0
Foreman, Water Supply	3	0.0	100.0	33.3	0.0	0.0	0.0
General Duties	1	0.0	100.0	0.0	0.0	0.0	0.0
Mechanic	1	0.0	100.0	0.0	0.0	0.0	0.0
Meter Installer	3	0.0	100.0	33.3	0.0	0.0	0.0
Meter Reader	3	0.0	100.0	33.3	0.0	0.0	0.0
Pump Station Oper.	4	0.0	75.0	75.0	0.0	0.0	0.0
Sewage Plant Oper.	3	0.0	66.6	66.6	0.0	0.0	0.0
Superintendent	7	0.0	42.8	42.8	28.5	0.0	14.2
Water Treat. Plant Oper.	5	0.0	60.0	60.0	20.0	0.0	20.0
Unskilled Laborer	7	42.8	71.4	28.5	14.2	0.0	0.0

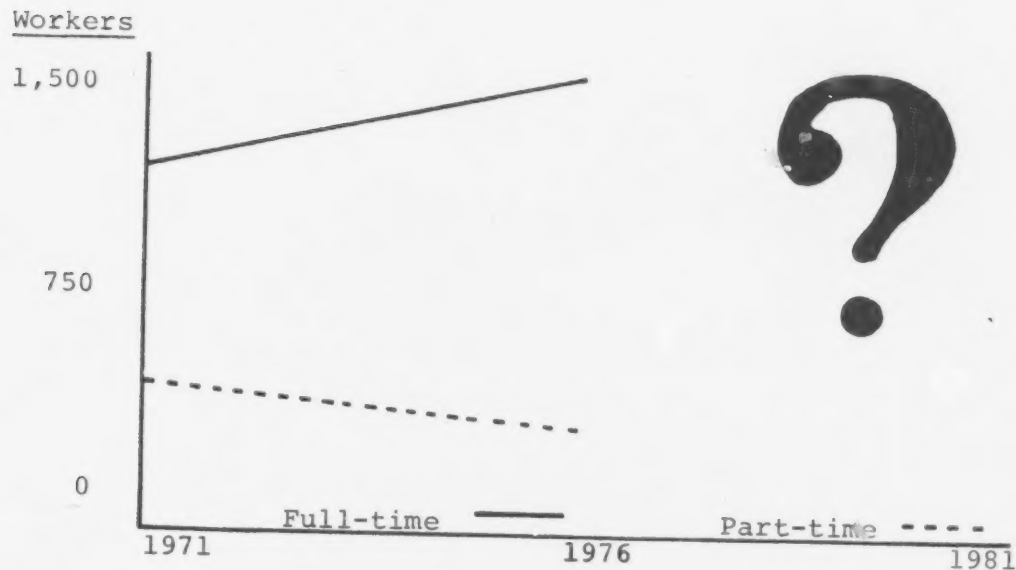
* May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 27

SALARY CHARACTERISTICS FOR WATER SUPPLY AND
SEWAGE OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Asst. Pump Station Oper.	1	126	126	1	132	132
Asst. Sewage Plant Oper.	1	125	125	1	200	200
Chlorine Station Oper.	1	131	131	1	137	137
Foreman, Sewage System	4	136	232	4	142	275
Foreman, Water Supply	4	130	200	4	130	275
General Duties	1	150	150	1	175	175
Insp. Fixtures in Houses	1	80	80	1	80	80
Mechanic	1	136	136	1	142	142
Meter Installer	4	100	120	4	110	140
Meter Reader	4	100	120	4	110	170
Pump Station Oper.	5	120	150	5	135	200
Sewage Plant Oper.	5	131	160	5	137	250
Superintendent	5	160	275	5	110	200
Unskilled Laborer	7	90	125	7	110	200
Water Treatment Plant Oper.	5	110	175	5	120	200

Municipal and County Governmental Services



Approximately 44.5% or 261 of the 586 municipal and county governments employ people with knowledge and skills in natural resources and/or agriculture. An increase of 35.1% for full-time positions and a 10.3% decrease for seasonal or part-time positions was projected for the five-year period reported in Table 28. These projections indicated a need for 1,392 full-time workers in 1976 compared with 1,030 in 1971. The projections for seasonal or part-time workers were 385 in 1976 compared with 429 in 1971. Recruitment needs for replacement and expansion during the five-year period included 484 full-time positions and a surplus of 2 for seasonal or part-time positions.

Table 29 provides some indications of the educational levels desired by employers for selected job titles. These data indicate that there are opportunities for workers at all educational levels in municipal and county governments.

Table 30 provides information on the 1971 salary characteristics of selected job titles. Although data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

TABLE 28

ESTIMATED EMPLOYMENT IN MUNICIPAL AND COUNTY GOVERNMENTAL SERVICES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Air Pollution Insp.	9	0	0	11	0	0	22.2	0.0
Air Pollution Spec.	0	9	9	3	6	6	Plus	- 33.3
Director, Public Works	6	0	0	6	0	0	0.0	0.0
Environmental Aide	0	0	0	3	0	0	Plus	0.0
Envir. Engineer	0	6	6	0	3	3	0.0	- 50.0
Envir. Protection Spec.	3	0	0	0	3	3	-100.0	Plus
Forester	3	0	0	6	0	0	100.0	0.0
Groundman (tree)	6	11	11	9	11	11	50.0	0.0
Health Officer	11	11	11	17	6	6	54.5	- 45.5
Industrial Hygienist	3	0	0	3	3	3	0.0	Plus
Meat Inspector	3	0	0	3	0	0	0.0	0.0
Park Groundsman	369	207	207	482	224	224	30.6	8.2
Park Supt./Foreman	142	23	23	119	23	23	- 16.2	0.0
Public Health Engineer	6	0	0	6	0	0	0.0	0.0
Sanitarian	77	77	77	131	40	40	70.1	- 48.1
Sanitarian Trainee	6	3	3	60	11	11	900.0	266.7
Sanitary Engineer	20	9	9	17	3	3	- 15.0	- 66.7
Sanitary Inspector	48	6	6	91	3	3	89.6	- 50.0
Sanitary Technician	0	0	0	3	0	0	Plus	0.0
Senior Air Pollution Insp.	3	0	0	3	0	0	0.0	0.0
Sewage Plant Assist.	102	23	23	139	20	20	36.3	- 13.0
Sewage Plant Oper.	11	6	6	11	0	0	0.0	-100.0
Solid Waste Spec.	17	9	9	28	6	6	64.7	- 33.3
Tree Climber	17	0	0	28	0	0	64.7	0.0
Tree Foreman	6	0	0	6	0	0	0.0	0.0
Water Engineer	0	3	3	0	3	3	0.0	0.0

TABLE 28 (continued)

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Water Plant Oper.	3	3		3	0		0.0	-100.0
Water-Sewer Supt.	6	0		3	0		- 50.0	0.0
Water Supt.	3	0		0	0		-100.0	0.0
Waterworks Asst.	82	20		116	17		41.5	- 15.0
Weights & Measure Insp.	68	3		85	3		25.0	0.0
Total	1030	429		1392	385		35.1	- 10.3

TABLE 29

EDUCATIONAL LEVELS DESIRED FOR MUNICIPAL AND COUNTY
GOVERNMENTAL SERVICE OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level *					
		None	On-the- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Air Pollution Insp.	1	0.0	100.0	0.0	0.0	0.0	0.0
Air Pollution Spec.	3	0.0	0.0	66.6	0.0	0.0	33.3
Director, Public Works	2	0.0	50.0	50.0	50.0	0.0	50.0
Environmental Aide	1	0.0	0.0	0.0	0.0	100.0	100.0
Envir. Protection Spec.	2	50.0	0.0	0.0	0.0	0.0	50.0
Forester	1	0.0	0.0	0.0	0.0	0.0	100.0
Groundman (tree)	1	0.0	100.0	0.0	0.0	0.0	0.0
Health Officer	7	0.0	0.0	0.0	14.2	14.2	71.4
Industrial Hygienist	1	0.0	0.0	0.0	0.0	100.0	0.0
Meat Inspector	1	0.0	0.0	100.0	0.0	0.0	0.0
Park Groundsman	28	7.1	64.2	10.7	35.7	0.0	0.0
Park Super./Foreman	24	4.1	45.8	16.6	33.3	12.5	8.3
Public Health Engineer	2	0.0	0.0	0.0	0.0	0.0	100.0
Sanitarian	24	4.1	12.5	29.1	12.5	33.3	29.1
Sanitarian Trainee	4	0.0	50.0	25.0	50.0	25.0	0.0
Sanitary Engineer	4	0.0	0.0	0.0	25.0	25.0	50.0
Sanitary Inspector	4	0.0	50.0	25.0	0.0	75.0	0.0
Sanitary Technician	1	0.0	0.0	0.0	0.0	100.0	0.0
Senior Air Pollution Insp.	1	0.0	100.0	0.0	0.0	0.0	0.0
Sewage Plant Assistant	22	9.0	40.9	27.2	40.9	4.5	4.5
Sewage Plant Operator	3	0.0	33.3	33.3	33.3	0.0	0.0
Solid Waste Specialist	6	0.0	16.6	66.6	0.0	0.0	33.3
Tree Climber	1	0.0	100.0	100.0	0.0	0.0	0.0
Tree Foreman	2	0.0	50.0	0.0	0.0	50.0	0.0
Waterwork Assistant	16	6.2	31.2	43.7	37.5	0.0	12.5

TABLE 29 (continued)

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level *					
		None	On-the Job	Short Courses	High School Vocational	2-Year College	4-Year College
Water Plant Operator	2	0.0	0.0	50.0	50.0	0.0	0.0
Water-Sewer Supt.	2	0.0	100.0	0.0	0.0	0.0	0.0
Weights & Measure Insp.	4	0.0	50.0	25.0	0.0	75.0	0.0

* May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 30

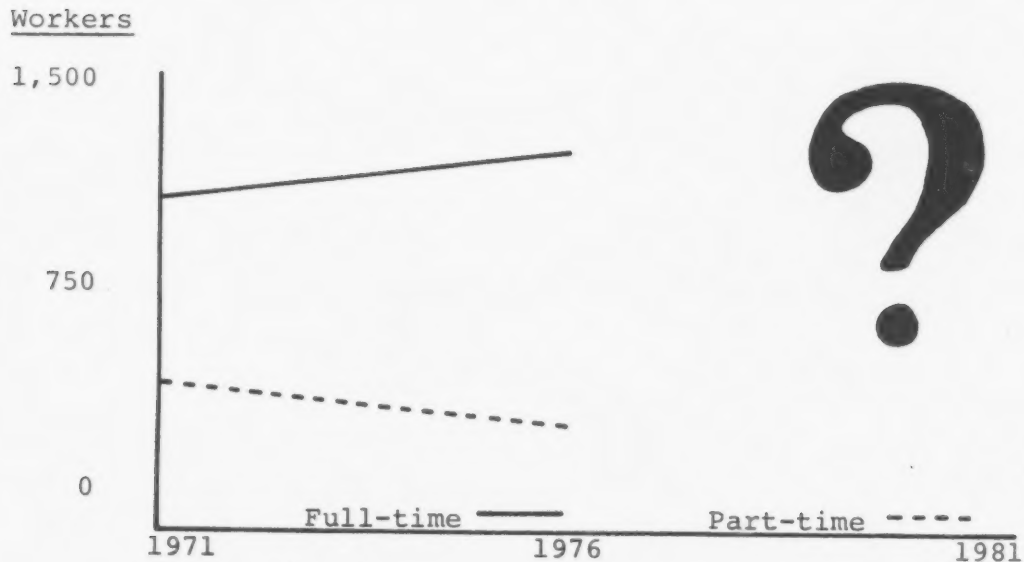
SALARY CHARACTERISTICS OF MUNICIPAL AND COUNTY GOVERNMENTAL
SERVICE OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary					Potential Maximum Salary				
	No. of Employer Responses		Weekly (dollars) Low High Mean			No. of Employer Responses		Weekly (dollars) Low High Mean		
Air Pollution Insp.	1	130	130	130	130	1	175	175	175	175
Air Pollution Spec.	1	140	140	140	140	1	195	195	195	195
Director, Public Works	2	190	231	210	210	2	200	269	234	234
Environmental Engineer	1	210	210	210	210	1	280	280	280	280
Environ. Protection Spec.	1	154	154	154	154	1	154	154	154	154
Forester	1	195	195	195	195	1	245	245	245	245
Groundman (tree)	1	140	140	140	140	1	160	160	160	160
Health Officer	4	200	284	243	243	3	250	310	290	290
Industrial Hygienist	1	225	225	225	225	1	275	275	275	275
Meat Inspector	1	130	130	130	130	1	175	175	175	175
Park Groundsman	31	65	175	117	117	29	72	200	144	144
Park Supt./Foreman	25	80	250	167	167	22	98	300	201	201
Public Health Engineer	2	98	346	222	222	2	98	346	222	222
Sanitarian	16	75	219	159	159	15	100	350	203	203
Sanitarian Trainee	2	80	110	95	95	2	110	150	130	130
Sanitary Engineer	5	160	200	186	186	4	160	250	220	220
Sanitary Inspector	6	58	182	132	132	6	61	227	160	160
Sr. Air Pollution Insp.	1	170	170	170	170	1	225	225	225	225
Sewage Plant Assistant	17	96	192	135	135	19	96	212	154	154
Sewage Plant Operator	4	77	185	134	134	4	77	215	150	150
Solid Waste Specialist	3	132	225	185	185	2	225	275	250	250
Tree Climber	1	165	165	165	165	1	170	170	170	170
Tree Foreman	1	205	205	205	205	2	205	212	208	208

TABLE 30 (continued)

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Water Plant Operator	1	154	154	1	154	154
Water/Sewer Supt.	2	189	230	1	199	199
Water Superintendent	1	221	221	0	0	0
Waterwork Assistant	9	19	264	0	0	0
Weights & Measure Insp.	7	100	175	6	122	225
			127			161

State and Federal Governmental Services



An increase of 34.0% for full-time positions and a 21.3% decrease for seasonal or part-time positions was projected for the five-year period reported in Table 31. These projections indicate a need for 1,222 full-time workers in 1976 compared with 912 in 1971. The projections for seasonal or part-time workers were 197 in 1976 compared with 263 in 1971. Recruitment needs for replacement and expansion during the five-year period included 417 full-time positions and a surplus of 43 seasonal or part-time workers.

Table 32 provides some indications of the educational levels desired by employers for selected job titles. Although all educational levels were represented, the need for college graduates was indicated for the majority of positions.

Table 31 provides information on the 1971 salary characteristics of selected job titles. Different civil service classifications are often involved because similar job titles were grouped for reporting purposes. The salary range indicates the lowest and highest salaries in the single or combined civil service ranges. Mean salaries for reporting employers were not used because civil service classifications or state salary classification systems were used for these positions.

The data included in this section are only for those state and federal agencies that provided information. These agencies included the Rutgers University College of Agriculture and Environmental Science; New Jersey Department of Agriculture; New Jersey Crop Reporting Service; United States Department of Agriculture Animal and Plant Health Inspection Service; New Jersey Department of Institutions and Agencies; New Jersey Department of Transportation; and the following administrative units of the Department of Environmental Protection: Division of Water Resources, Division of Marine Services, Division of Fish, Game, and Shell Fisheries, and Bureau of Forests.

TABLE 31

ESTIMATED EMPLOYMENT IN STATE AND FEDERAL
GOVERNMENTAL SERVICES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Agri. & Envir. Sci. University Faculty	342	0	0	376	0	0	10.0	0.0
Agri. Economist	2	0	0	2	0	0	0.0	0.0
Agri. Market Spec.	3	0	0	3	0	0	0.0	0.0
Analyst, Agri.	2	0	0	1	0	0	- 50.0	0.0
Animal & Plant Health Sup.	2	0	0	2	0	0	0.0	0.0
Animal Sci. Tech. Staff	10	0	0	11	0	0	10.0	0.0
Bacteriologist	1	0	0	1	0	0	0.0	0.0
Biochem. & Micro. Tech.	5	0	0	6	0	0	20.0	0.0
Biolog. Lab. Tech.	1	0	0	1	0	0	0.0	0.0
Biolog. & Agri. Eng. Tech.	1	0	0	1	0	0	0.0	0.0
Biologist	7	1	1	11	2	2	57.1	100.0
Bureau Chief, Agri.	8	0	0	8	0	0	0.0	0.0
Chemist	6	0	0	12	0	0	100.0	0.0
Computer Prog., Agri.	1	0	0	1	0	0	0.0	0.0
Conservation Officer	41	0	0	43	0	0	4.9	0.0
Coordinator, Agri.	6	1	1	9	0	0	50.0	-100.0
Dairyman	9	0	0	60	0	0	556.7	0.0
Dairyman, Head	6	0	0	7	0	0	16.7	0.0
Deputy Director, Agri.	3	0	0	3	0	0	0.0	0.0
Division Director, Agri.	8	0	0	8	0	0	0.0	0.0
Entomologist	4	1	1	4	1	1	0.0	0.0
Entomology Tech.	3	0	0	3	0	0	0.0	0.0
Enumerator, Agri.	0	24	24	0	24	24	0.0	0.0

TABLE 31 (continued)

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Envir. Aide	0	0	2	0	Plus	0.0
Envir. Engineer	48	6	67	12	39.8	100.0
Envir. Engin. Aide	2	0	3	0	50.0	0.0
Envir. Field Worker	15	0	25	0	66.7	0.0
Envir. Physiology Tech.	2	0	2	0	0.0	0.0
Envir. Program Spec.	0	0	1	0	Plus	0.0
Envir. Science Tech.	4	0	4	0	0.0	0.0
Envir. Specialist	4	0	4	0	0.0	0.0
Envir. Tech.	0	0	10	4	Plus	0.0
Farm Supervisor	7	0	7	0	0.0	0.0
Farmer	16	0	26	0	62.5	0.0
Farmer, Assistant	6	0	26	0	333.3	0.0
Farmer, Head	8	0	8	0	0.0	0.0
Fisheries Biologist	10	15	10	16	0.0	6.7
Food Science Tech.	2	0	2	0	0.0	0.0
Forester	19	0	22	0	15.8	0.0
Gardener	2	0	6	0	400.0	0.0
Geologist	9	5	12	7	33.3	40.0
Greenhouseman, Assist.	2	0	2	0	0.0	0.0
Greenhouseman, Head	1	0	1	0	0.0	0.0
Groundsman	34	0	50	0	47.1	0.0
Groundsman, Assist.	36	0	40	0	11.1	0.0
Groundsman, Head	12	0	12	0	0.0	0.0
Hort. Tech.	9	0	10	0	11.1	0.0
Inspector, Agri.	16	101	59	42	268.7	- 58.4
Inspector, Assist. (Agri.)	0	34	0	34	0.0	0.0

TABLE 31 (continued)

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Inspector Livestock & Inv.	3	0	3	0	0.0	0.0
Inspector Senior (Agri.)	30	14	46	0	53.3	-100.0
Inspector, Sup. (Agri.)	3	5	8	0	166.7	-100.0
Lab. Assist. & Ser. Worker	5	12	4	4	-20.0	-66.7
Lab. and/or Insp. Chief	3	0	3	0	0.0	0.0
Lab. Tech.	4	3	4	2	0.0	-50.0
Lab. Tech. Assist.	0	10	9	25	Plus	150.0
Land.Hwy. Maint. Foreman	15	0	20	0	33.3	0.0
Land. Maint. Sup.	2	0	3	0	50.0	0.0
Marine Biologist	2	0	8	0	300.0	0.0
Marketing Rep. (Agri.)	5	0	5	0	0.0	0.0
Misc. Agri.	3	0	3	0	0.0	0.0
Nutrition Tech.	2	0	2	0	0.0	0.0
Oyster Tech.	5	0	6	0	20.0	0.0
Plant Protect. Sup.	2	0	2	0	0.0	0.0
Poultryman, Head	1	0	1	0	0.0	0.0
Proced. Analyst	1	0	2	0	100.0	0.0
Public Info. Assist.	1	1	2	0	100.0	-100.0
Sanitarian	2	2	3	2	50.0	0.0
Seed Analyst	3	0	3	0	0.0	0.0
Sewage Plant Oper.	12	0	10	0	-16.7	0.0
Soil Conser. Spec.	3	0	3	0	0.0	0.0
Soils & Crops Tech.	5	0	5	0	0.0	0.0
Statistician	3	0	3	0	0.0	0.0
Statistician, Assist.	1	0	1	0	0.0	0.0
Supt. Inst. Grounds	4	0	4	0	0.0	0.0

TABLE 31 (continued)

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Supervisor, Agri.	10	5	12	0	20.0	-100.0
Super. Assist. (Agri.)	1	0	1	0	0.0	0.0
Veterinarian	5	4	5	0	0.0	-100.0
Vet. Med. Officer	6	0	6	0	0.0	0.0
Water Plant Oper.	2	0	11	0	450.0	0.0
Water Resources Eng.	23	3	30	5	30.4	66.7
Wildlife Biologist	10	16	10	17	0.0	6.3
Total	912	263	1,222	197	34.0	- 21.3

TABLE 32

EDUCATIONAL LEVELS DESIRED FOR STATE AND FEDERAL
OCCUPATIONS IN NEW JERSEY, 1971

No. of Employer Responses		Percent of Employers Specifying Each Educational Level *					
Job Titles		None	On-the- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Agric. & Env. Sci. University Faculty	0	0.0	0.0	0.0	0.0	0.0	100.0
Agri. Economist	0	0.0	0.0	0.0	0.0	0.0	100.0
Agri. Market Spec.	0	0.0	0.0	0.0	0.0	0.0	100.0
Analyst Agri.	0	0.0	0.0	0.0	0.0	0.0	100.0
Animal & Plant Health Sup.	0	0.0	0.0	0.0	0.0	0.0	100.0
Animal Science Tech.	0	0.0	0.0	0.0	0.0	0.0	100.0
Bacteriologist	0	0.0	0.0	0.0	0.0	0.0	100.0
Biochem. & Micro. Tech.	0	0.0	0.0	0.0	0.0	0.0	100.0
Biolog. Lab. Tech.	0	0.0	0.0	0.0	100.0	0.0	0.0
Biolog. & Agri. Eng. Tech.	0	0.0	0.0	0.0	0.0	0.0	100.0
Biologist	0	0.0	0.0	0.0	0.0	0.0	100.0
Bureau Chief Agri.	0	0.0	0.0	0.0	0.0	0.0	100.0
Chemist	0	0.0	0.0	0.0	0.0	0.0	100.0
Computer Prog. Agri.	0	0.0	0.0	0.0	0.0	100.0	0.0
Conservation Officer	0	0.0	0.0	0.0	0.0	100.0	0.0
Coordinator, Agri.	0	0.0	0.0	0.0	0.0	100.0	100.0
Dairyman	0	0.0	100.0	0.0	0.0	0.0	0.0
Dairyman, Head	0	0.0	0.0	0.0	100.0	0.0	0.0
Deputy Director, Agri.	0	0.0	0.0	0.0	0.0	0.0	100.0
Division Director, Agri.	0	0.0	0.0	0.0	0.0	0.0	100.0
Entomologist	0	0.0	0.0	0.0	0.0	0.0	100.0
Entomology, Tech.	0	0.0	0.0	0.0	0.0	0.0	100.0
Enumerator, Agri.	0	0.0	0.0	0.0	100.0	0.0	0.0
Envir. Aide	0	0.0	0.0	0.0	0.0	100.0	0.0

TABLE 32 (continued)

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level *					
		None	On-the- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Envir. Engineer	0	0.0	0.0	0.0	0.0	0.0	100.0
Envir. Eng. Aide	0	0.0	0.0	0.0	0.0	0.0	100.0
Envir. Field Worker	0	0.0	100.0	0.0	0.0	0.0	0.0
Envir. Physiology Tech.	0	0.0	0.0	0.0	0.0	0.0	100.0
Envir. Program Spec.	0	0.0	0.0	0.0	0.0	0.0	100.0
Envir. Science Tech.	0	0.0	0.0	0.0	0.0	0.0	100.0
Envir. Specialist	0	0.0	0.0	0.0	0.0	0.0	100.0
Envir. Tech.	0	0.0	0.0	0.0	0.0	100.0	0.0
Farm Supervisor	0	0.0	0.0	0.0	100.0	0.0	0.0
Farmer	0	0.0	0.0	100.0	0.0	0.0	0.0
Farmer, Assistant	0	0.0	100.0	0.0	0.0	0.0	0.0
Farmer, Head	0	0.0	0.0	0.0	100.0	0.0	0.0
Fisheries Biologist	0	0.0	0.0	0.0	0.0	0.0	0.0
Food Science Tech.	0	0.0	0.0	0.0	0.0	0.0	100.0
Forester	0	0.0	0.0	0.0	0.0	0.0	100.0
Gardener	0	0.0	100.0	0.0	100.0	0.0	0.0
Geologist	0	0.0	0.0	0.0	0.0	0.0	100.0
Greenhouseman, Assist.	0	0.0	100.0	0.0	0.0	0.0	0.0
Greenhouseman, Head	0	0.0	0.0	0.0	100.0	0.0	0.0
Groundsman	0	0.0	0.0	100.0	0.0	0.0	0.0
Groundsman, Assist.	0	0.0	100.0	0.0	0.0	0.0	0.0
Groundsman, Head	0	0.0	0.0	0.0	100.0	0.0	0.0
Hort. Tech.	0	0.0	0.0	0.0	0.0	0.0	0.0
Inspector, Agri.	0	100.0	0.0	100.0	100.0	0.0	100.0
Inspector, Assist. (Agri.)	0	0.0	0.0	0.0	100.0	0.0	0.0
Inspectors, Livestock & Inv.	0	0.0	0.0	0.0	100.0	0.0	0.0
Inspector, Senior (Agri.)	0	0.0	0.0	0.0	0.0	100.0	0.0
Inspector, Sup. (Agri.)	0	0.0	0.0	0.0	100.0	0.0	100.0

TABLE 32 (continued)

Percent of Employers Specifying Each Educational Level*							
Job Titles	No. of Employer Responses	None	On-the-Job	Short Courses	High School Vocational	2-Year College	4-Year College
Lab. Assist. & Ser. Worker	0	0.0	0.0	0.0	100.0	0.0	0.0
Lab. and/or Insp. Chief	0	0.0	0.0	0.0	0.0	0.0	100.0
Lab. Tech.	0	0.0	0.0	0.0	100.0	0.0	0.0
Lab. Tech. Assist.	0	0.0	0.0	0.0	100.0	0.0	0.0
Land. Hwy. Maint. Fore.	0	0.0	100.0	100.0	100.0	0.0	0.0
Land. Maint. Sup.	0	0.0	100.0	100.0	100.0	0.0	0.0
Marine Biologist	0	0.0	0.0	0.0	0.0	0.0	100.0
Marketing Rep., Agri.	0	0.0	0.0	0.0	0.0	0.0	100.0
Misc. Agri.	0	0.0	0.0	0.0	100.0	0.0	100.0
Nutrition Tech.	0	0.0	0.0	0.0	0.0	0.0	100.0
Oyster Tech.	0	0.0	100.0	0.0	0.0	0.0	0.0
Plant Protect. Sup.	0	0.0	0.0	0.0	0.0	0.0	100.0
Poultryman, Head	0	0.0	0.0	0.0	100.0	0.0	0.0
Proced. Analyst	0	0.0	0.0	0.0	0.0	0.0	100.0
Public Info. Assist.	0	0.0	0.0	0.0	0.0	0.0	100.0
Sanitarian	0	0.0	0.0	0.0	0.0	0.0	100.0
Seed Analyst	0	0.0	0.0	0.0	0.0	0.0	100.0
Sewage Plant Oper.	0	0.0	0.0	0.0	100.0	0.0	0.0
Soil Conse. Spec.	0	0.0	0.0	0.0	0.0	0.0	100.0
Soils & Crops Tech.	0	0.0	0.0	0.0	0.0	0.0	100.0
Statistician	0	0.0	0.0	0.0	0.0	0.0	100.0
Statistician, Assist.	0	0.0	0.0	0.0	100.0	0.0	0.0
Supt., Inst. Grounds	0	0.0	0.0	0.0	100.0	0.0	0.0
Supervisor, Agri.	0	0.0	0.0	100.0	100.0	100.0	100.0
Super., Assist. (Agri.)	0	0.0	0.0	100.0	0.0	0.0	0.0
Veterinarian	0	0.0	0.0	0.0	0.0	0.0	100.0
Vet. Med. Officer	0	0.0	0.0	0.0	0.0	0.0	100.0

TABLE 32 (continued)

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level *					
		None	On-the- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Water Plant Oper.	0	0.0	0.0	0.0	100.0	0.0	0.0
Water Resources Eng.	0	0.0	0.0	0.0	0.0	0.0	100.0
Wildlife Biologist	0	0.0	0.0	0.0	0.0	0.0	100.0

* May add to more than 100 percent since employers have indicated more than one level for some jobs.

TABLE 33

SALARY CHARACTERISTICS FOR STATE AND FEDERAL
GOVERNMENTAL OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary Weekly (dollars)	Potential Maximum Salary Weekly (dollars)
Agric. & Env. Sci.	166	701
University Faculty	231	301
Agri. Economist	190	272
Agri. Market Spec.	172	332
Analyst, Agri.	360	548
Animal & Plant Health Super.	113	195
Animal Science Tech.	199	254
Bacteriologist	113	195
Biochem. & Micro. Tech.	140	183
Biolog. Lab. Tech.	113	195
Biolog. & Agri. Eng. Tech.	172	300
Biologist	231	365
Bureau, Chief, Agri.	172	300
Chemist	140	276
Computer, Prog., Agri.	143	186
Conservation Officer	252	348
Coordinator, Agri.	123	159
Dairyman	164	214
Dairyman, Head	310	402
Deputy Director, Agri.	281	516
Division Director, Agri.	181	272
Entomologist	113	195
Entomology Tech.	112	185
Enumerator, Agri.	125	175
Envir. Aide	172	348
Envir. Engineer	150	250
Envir. Engin. Aide		

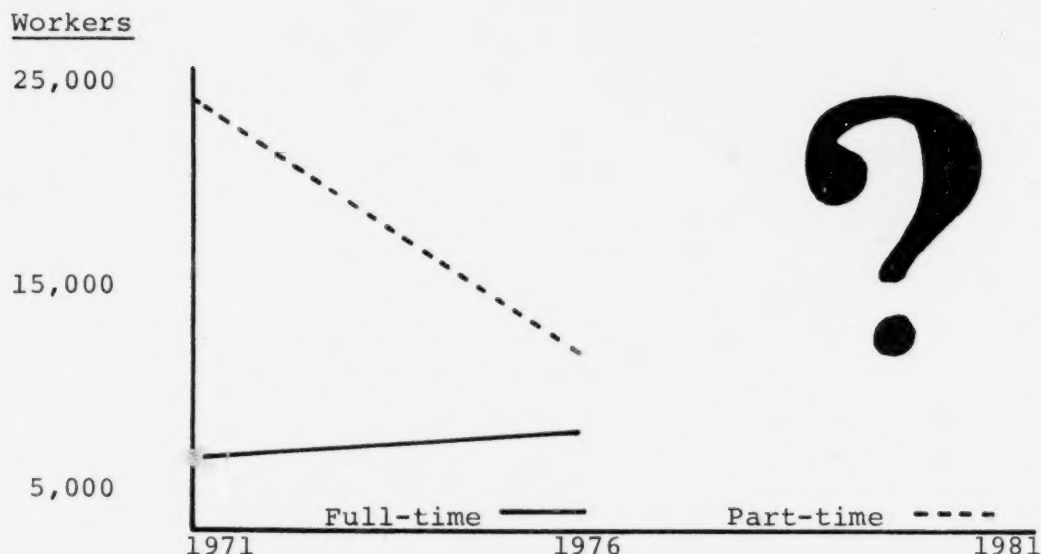
TABLE 33 (continued)

Job Titles	Beginning Salary Weekly (dollars)	Potential Maximum Salary Weekly (dollars)
Envir. Field Worker	135	235
Envir. Physiology Tech.	113	195
Envir. Program Spec.	150	300
Envir. Science Tech.	113	195
Envir. Specialist	172	224
Envir. Tech.	164	224
Farm Supervisor	172	273
Farmer	117	152
Farmer, Assistant	106	138
Farmer, Head	157	204
Fisheries Biologist	174	226
Food Science Tech.	113	195
Forester	181	423
Gardener	96	204
Geologist	164	348
Greenhouseman, Assist.	96	125
Greenhouseman, Head	157	204
Groundsman	117	152
Groundsman, Assist.	96	125
Groundsman, Head	157	204
Hort. Tech.	113	195
Inspector, Agri.	111	203
Inspector, Assist. (Agri.)	111	138
Inspector, Livestock & Inv.	140	183
Inspector, Senior (Agri.)	149	203
Inspector, Sup. (Agri.)	190	247
Lab. Assist. & Service Worker	87	137
Lab. and/or Insp. Chief	281	365
Lab. Tech.	129	167

TABLE 33 (continued)

Job Titles	Beginning Salary Weekly (dollars)	Potential Maximum Salary Weekly (dollars)
Lab. Tech. Assist.	61	86
Land. Hwy. Maint. Fore.	165	215
Land. Maint. Sup.	190	250
Marine Biologist	150	300
Marketing Rep., Agri.	172	247
Misc. Agri.	151	365
Nutrition Tech.	113	195
Oyster Tech.	113	195
Plant Protect Sup.	305	468
Poultryman, Head	157	204
Proced. Analyst	199	254
Public Info. Assist.	199	300
Sanitarian	172	300
Seed Analyst	172	254
Sewage Plant Oper.	157	204
Soil Conser. Spec.	199	348
Soils & Crops. Tech.	113	195
Statistician	140	466
Statistician, Assist.	141	184
Supt., Inst. Grounds	172	224
Supervisor, Agri.	151	247
Super, Assist. (Agri.)	122	159
Veterinarian	255	331
Vet. Med. Officer	212	549
Water Plant Oper.	157	204
Water Resources Eng.	172	348
Wildlife Biologist	174	226

V. FARM PRODUCTION AND RELATED SERVICES



The projected trend for people with skills and knowledge in farm production and related services indicated greater demand for full-time workers and less demand for seasonal or part-time workers for the five-year period from 1971 to 1976. The projections in Table 34 combine the areas of commercial farming and agricultural machinery. A 15.1% increase in full-time positions from 6,221 in 1971 to 7,161 in 1976 was projected. The seasonal or part-time employment situation indicated a 51.7% decrease from 23,679 workers in 1971 to 11,441 in 1976. Considering a 2% annual replacement rate due to retirement and other factors, 1,609 people will have to be recruited and trained for the 940 new positions and the 669 replacement full-time positions. A surplus of 10,482 seasonal or part-time workers was projected which accounted for the

elimination of 12,238 positions minus the 1,756 replacements.

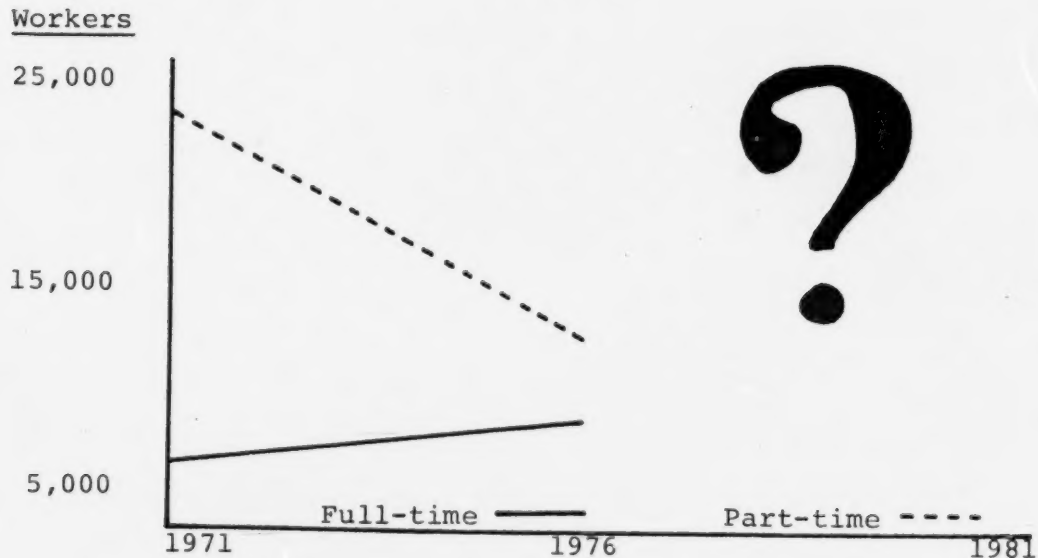
A more detailed analysis of the trends in farm production and related service occupations is available on the following pages. Table 34 provides a composite analysis of the manpower trends in these occupations by job title. The sub-sections for commercial farming and agricultural machinery provide trends for manpower needs, educational levels desired by employers, salary characteristics, and additional information on the general manpower situation in New Jersey.

TABLE 34
ESTIMATED EMPLOYMENT IN FARM PRODUCTION AND RELATED SERVICES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Animal Caretaker	85	0	213	43	150.6	Plus
Berry Grower	170	1488	85	638	- 50.0	- 57.1
Dairymen	723	553	765	383	5.8	- 30.7
Equipment Operator	383	340	383	255	0.0	- 25.0
Farm Mach. Set-Up	14	21	36	9	157.2	57.1
Farm Mechanic	5	0	9	0	80.0	0.0
Field Crop Grower	85	85	0	0	-100.0	-100.0
Flower Grader	85	213	85	213	0.0	0.0
Flower Grower	85	128	128	170	50.6	32.8
Foreman	354	298	363	85	2.5	- 71.5
General Farmer	340	765	383	213	12.6	- 72.2
Herdsmen	170	128	213	128	25.3	0.0
Livestock Farmer	255	85	298	85	16.9	0.0
Manager	46	0	51	0	10.9	0.0
Mechanic	43	0	43	43	0.0	Plus
Mechanic/Diesel	37	7	78	0	110.8	-100.0
Mechanic/Gas	124	63	148	81	19.6	28.6
Mechanic Helper	5	0	5	0	0.0	0.0
Nursery Worker	128	255	128	425	0.0	66.7
Orchardist	255	978	298	128	16.9	- 86.9
Owner	5	0	0	0	-100.0	0.0
Painter	0	5	0	5	0.0	0.0
Parts Manager	30	0	34	0	13.3	0.0

TABLE 34 (continued)

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Poultryman	170	340		128	170		- 24.7	- 50.0
Refrig. Mech.	5	5		43	0		760.0	-100.0
Sales Cler, Parts	32	14		39	9		21.9	- 35.7
Salesman	75	11		123	0		64.0	-100.0
Sales Manager	14	0		21	0		50.0	0.0
Truck Driver	358	446		384	179		7.3	- 59.9
Vegetable Grower	298	1743		170	1233		- 43.0	- 29.3
Unskilled Laborer	1833	15,701		2493	6939		- 36.0	- 55.9
Welder	9	7		14	7		55.6	0.0
Total	6,221	23,679		7,161	11,441		15.1	- 51.7

Commercial Farming

Commercial farmers, excluding nurserymen, projected a 12.2% increase in full-time employment and a 52.0% decrease in seasonal or part-time employment for the five-year period reported in Table 35. They estimated a need for 6,296 full-time workers in 1976 compared with 5,613 in 1971. The estimations for seasonal employment were 11,270 in 1976 compared with 23,470 in 1971. Recruitment needs for replacement and/or expansion included 1,279 full-time workers and a surplus of 10,573 seasonal or part-time workers. It should be noted that these figures do not include the 31.6% of the businesses that were reported as family operated without any reference to job titles or 1976 projections. Some horticultural occupations were included because of a slight overlapping of mailing lists.

Table 36 provides some indications of the educational levels desired by employers for selected job titles. All educational levels are desired by some job titles. Further analysis is complicated by the projected surplus of seasonal or part-time workers. One of the biggest unanswered questions is whether the replacements for full-time workers will come from the seasonal or part-time segment of the work force. It is obvious that a great deal of emphasis is directed toward on-the-job training.

Table 37 provides information on the 1971 salary characteristics for selected job titles. Although data are limited, they do provide some impressions of the relative financial rewards of the various job titles. It should be noted that fringe benefits such as housing, some farm products, etc. are often provided, which are difficult to put a specific dollar value on; these fringe benefits, when they are provided, would be in addition to the salaries in this table.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. In answer to the question on employing day-haul workers, 21.7% employed day-haul workers, 68.3% did not employ day-haul workers, and 10% did not comment. In respect to off-season activities of the employees, the two major responses were: (1) that they attended school and (2) that they migrated to another area (Puerto Rico or other states). A smaller number of employers indicated that the off-season activities of their employees

included other jobs or unemployment. In many situations, employers did not know what the employees did during periods of the year when not working for them.

The employers' views of the manpower situation in New Jersey were related to their views on the future of farming. Although many employers were optimistic about the future, others cited high labor costs, high taxes, and high land values as problems in the future. Competition for labor may require higher salaries; the problem faced by many was how to pay higher salaries and still remain in business. Some were concerned that liberal unemployment compensation and welfare regulations tend to discourage a willingness to work.

TABLE 35

ESTIMATED EMPLOYMENT IN COMMERCIAL FARMING
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	
Animal Caretaker	85	0	213	43	150.6	Plus	
Berry Grower	170	1488	85	638	- 50.0	- 57.1	
Dairyman	723	553	765	383	5.8	- 30.7	
Equipment Oper.	383	340	383	255	0.0	- 25.0	
Field Crop Grower	85	85	0	0	-100.0	-100.0	
Flower Grader	85	213	85	213	0.0	0.0	
Flower Grower	85	128	128	170	50.6	32.8	
Foreman	340	298	340	85	0.0	- 71.5	
General Farmer	340	765	383	213	12.6	- 72.2	
Herdsmen	170	128	213	128	25.3	0.0	
Livestock Farmer	255	85	298	85	16.9	0.0	
Mechanic	43	0	43	43	0.0	Plus	
Nursery Worker	128	255	128	425	0.0	66.7	
Orchardist	255	978	298	128	16.9	- 86.9	
Poultryman	170	340	128	170	- 24.7	- 50.0	
Refrig. Mech.	0	0	43	0	Plus	0.0	
Truck Driver	340	425	340	170	0.0	- 60.0	
Vegetable Grower	298	1743	170	1233	- 43.0	- 29.3	
Unskilled Laborer	1658	15,646	2253	6888	35.9	- 56.0	
Total	5,613	23,470	6,296	11,270	12.2	- 52.0	

TABLE 36

EDUCATIONAL LEVELS DESIRED FOR COMMERCIAL FARMING OCCUPATIONS
IN NEW JERSEY, 1971

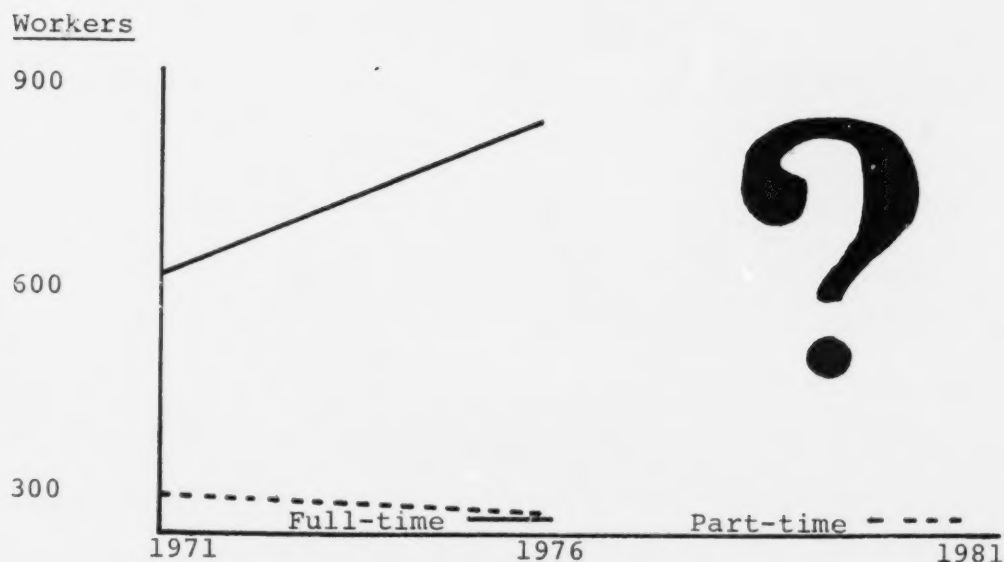
Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level *					
		None	On-the- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Animal Caretaker	1	0.0	100.0	100.0	0.0	0.0	0.0
Berry Grower	5	20.0	60.0	0.0	0.0	0.0	20.0
Dairyman	11	0.0	72.7	9.0	9.0	9.0	9.0
Equip. Oper.	5	0.0	80.0	20.0	20.0	0.0	0.0
Field Crop Grower	1	0.0	100.0	100.0	0.0	0.0	0.0
Foreman	7	0.0	71.4	0.0	14.2	28.5	0.0
General Farmer	7	0.0	85.7	0.0	28.5	0.0	0.0
Herdsmen	6	16.6	66.6	0.0	0.0	16.6	0.0
Laborer	21	23.8	76.1	0.0	4.7	0.0	0.0
Livestock Farmer	3	0.0	66.6	0.0	33.3	0.0	0.0
Mechanic	1	0.0	0.0	100.0	0.0	0.0	0.0
Orchardist	3	0.0	66.6	0.0	33.3	0.0	0.0
Poultryman	2	0.0	100.0	0.0	0.0	0.0	0.0
Truck Driver	6	0.0	100.0	0.0	0.0	0.0	0.0
Vegetable Grower	11	18.1	81.8	9.0	0.0	0.0	0.0

* May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 37

SALARY CHARACTERISTICS FOR COMMERCIAL FARMING
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of		Weekly (dollars)	No. of		Weekly (dollars)
	Employer Responses	Low High Mean		Employer Responses	Low High Mean	
Animal Caretaker	1	85	85	1	120	120
Berry Grower	4	70	100	5	90	125
Dairymen	8	50	100	7	75	125
Equip. Oper.	5	72	120	4	86	160
Field Crop Grower	1	125	125	1	150	150
Foreman	7	90	150	5	115	200
General Farmer	7	70	130	6	90	140
Herdsmen	3	80	120	3	100	230
Livestock Farmer	4	80	125	3	125	150
Orchardist	3	70	164	3	115	180
Poultryman	1	70	70	1	120	120
Truck Driver	4	75	125	4	100	160
Vegetable Grower	8	65	115	7	100	160

Agricultural Machinery

Agricultural machinery businessmen projected a 42.3% increase in full-time employment and an 18.2% decrease in seasonal or part-time employment during the five-year period reported in Table 38. Closer inspection of the data indicates that the number of people involved is relatively small. They indicated a need for 865 full-time workers in 1976 compared with 608 in 1971. The estimations for seasonal or part-time workers was 171 in 1976 compared with 209 in 1971. Recruitment needs for replacement and/or expansion included 331 full-time workers and a surplus of 19 seasonal or part-time workers. It should be noted that these figures do not include the 4.2% of the businesses that were reported as family operated without any reference to job titles or 1976 projections.

Table 39 provides some indications of the educational levels desired by employers for selected job titles. The data indicate a need for vocational, 2-year collegiate, 4-year collegiate, and short-term courses in addition to on-the-job training provided by employers.

Table 40 provides information on the 1971 salary characteristics for selected job titles. Although data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. Off-season activities of this work force included school and other jobs.

The employers' views of the future employment situation included: (1) shortage of trained labor; and (2) concern with liberal welfare regulations.

TABLE 38
ESTIMATED EMPLOYMENT IN AGRICULTURAL MACHINERY BUSINESSES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Total	No. of Full Time	No. of Part Time	No. of Total	Full Time	Part Time
Farm Mach. Set-Up	14	21		36	9		157.2	57.1
Farm Mechanic	5	0		9	0		80.0	0.0
Foreman	14	0		23	0		64.3	0.0
Manager	46	0		51	0		10.9	0.0
Mechanic/Diesel	37	7		78	0		110.8	-100.0
Mechanic/Gas	124	63		148	81		19.6	28.6
Mechanic Helper	5	0		5	0		0.0	0.0
Owner	5	0		0	0		-100.0	0.0
Painter	0	5		0	5		0.0	0.0
Parts Manager	30	0		34	0		13.3	0.0
Refrig. Mechanic	5	5		0	0		-100.0	-100.0
Sales Clerk/Parts	52	14		39	9		21.9	-35.7
Salesman	75	11		123	0		64.0	-100.0
Sales Manager	14	0		21	0		50.0	0.0
Truck Driver	18	21		44	9		144.4	-57.1
Unskilled Laborer	175	55		240	51		37.1	-7.3
Welder	9	7		14	7		55.6	0.0
Total	608	209		865	171		42.3	-18.2

TABLE 39

EDUCATIONAL LEVELS DESIRED FOR AGRICULTURE, MACHINERY OCCUPATIONS
IN NEW JERSEY, 1971

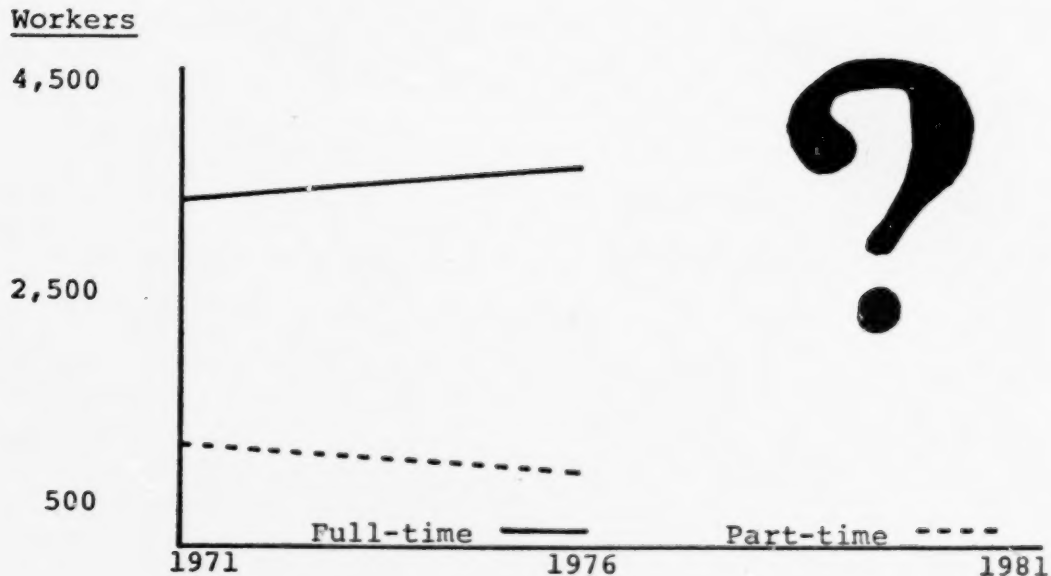
Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level *					
		None	On-the Job	Short Courses	High School Vocational	2-Year College	4-Year College
Farm Mach. Set-Up Man	4	0.0	100.0	25.0	25.0	0.0	0.0
Farm Mechanic	1	0.0	0.0	0.0	100.0	0.0	0.0
Foreman	4	0.0	0.0	0.0	0.0	75.0	25.0
Manager	7	0.0	14.2	0.0	14.2	28.5	42.8
Mechanic/Diesel	5	0.0	20.0	0.0	60.0	20.0	0.0
Mechanic/Gas	15	0.0	33.3	13.3	53.3	13.3	0.0
Parts Manager	6	0.0	33.3	0.0	16.6	50.0	0.0
Refrigeration Mech.	1	0.0	0.0	100.0	0.0	0.0	0.0
Sales Clerk/Parts	5	0.0	20.0	0.0	60.0	20.0	0.0
Salesman	9	0.0	44.4	33.3	11.1	55.5	11.1
Sales Manager	3	0.0	0.0	0.0	0.0	33.3	66.6
Truck Driver	5	20.0	20.0	0.0	60.0	0.0	0.0
Unskilled Laborer	2	50.0	50.0	0.0	50.0	0.0	0.0
Welder	2	0.0	0.0	0.0	100.0	0.0	0.0

* May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 40
SALARY CHARACTERISTICS FOR AGRICULTURAL MACHINERY OCCUPATIONS
IN NEW JERSEY, 1971

Job Titles	Beginning Salary				Potential Maximum Salary			
	No. of		Weekly (dollars)		No. of		Weekly (dollars)	
	Employer Responses	Low	High	Mean	Employer Responses	Low	High	Mean
Farm Mach. Set-Up Man	4	80	100	92	5	125	160	141
Farm Mechanic	1	125	125	125	1	180	180	180
Foreman	4	100	225	162	4	180	300	228
Manager	8	100	300	191	7	150	400	257
Mechanic/Diesel	5	90	180	129	6	150	200	177
Mechanic/Gas	15	80	120	119	15	125	220	177
Painter								
Parts Manager	5	90	200	146	1	130	130	130
Refrigerator Mech.	1	150	150	150	6	150	260	184
Sales Clerk/Parts	6	90	140	108	1	200	200	200
Salesman	8	100	225	135	6	125	160	145
Sales Manager	3	100	300	183	8	135	300	202
Truck Driver	6	80	140	101	3	200	400	283
Unskilled Laborer	4	80	80	80	6	100	200	141
Welder	2	120	130	125	3	80	125	101
					2	160	175	167

VI. ANIMAL SERVICES



The projected trend for people with skills and knowledge in animal services indicates greater demand for full-time workers and less demand for seasonal or part-time workers during the five-year period from 1971 to 1976. The estimations in Table 41 combine the areas of animal health and care services, pharmaceutical research, and race tracks and stables. A 16.7% increase in full-time positions from 3,233 in 1971 to 3,774 in 1976 was projected. The projections included a decrease of 25.7% for seasonal or part-time workers from 1,087 in 1971 to 808 in 1976. Considering a 2% annual replacement rate due to retirement and other factors, 891 people will have to be recruited and trained for the 541 new positions and the 350 replacement full-time positions. The seasonal or part-time situation is different.

When the replacement number of 95 is considered, there will still be a surplus of 184 seasonal or part-time workers.

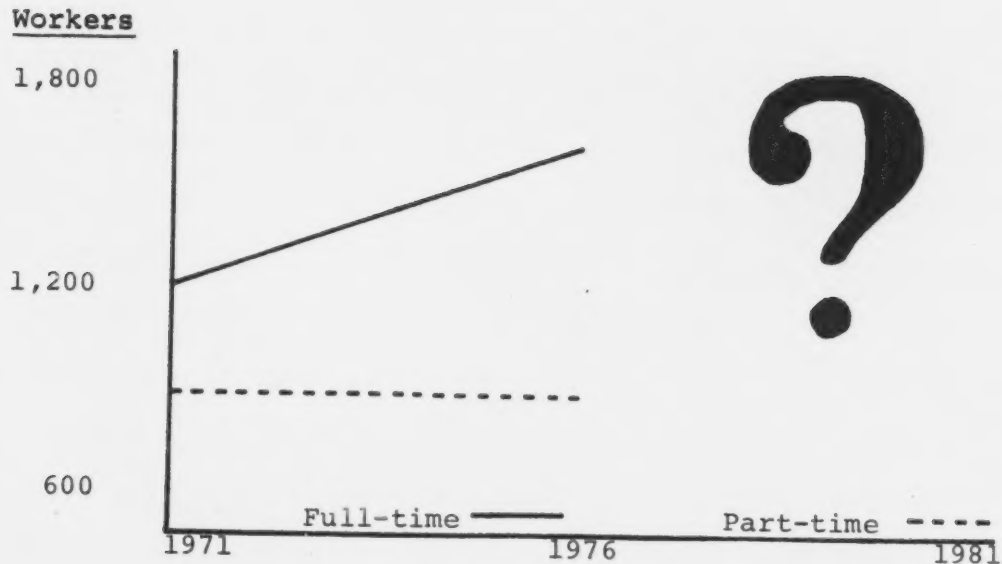
A more detailed analysis of the trends in animal care occupations is available on the following pages. Table 41 provides a composite analysis of the manpower need trends in these occupations by job title. The sub-sections for animal health and care services, pharmaceutical research, and race tracks and stables provide trends for manpower needs, educational levels desired by employers, salary characteristics, and additional information on the general manpower situation in New Jersey.

TABLE 41
ESTIMATED EMPLOYMENT IN ANIMAL SERVICES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Agric. Equip. Oper	0	31	0	6	0.0	- 80.6
Animal Caretaker	639	142	855	125	33.8	- 12.0
Asst. Res. Assoc., Para.	13	0	13	0	0.0	0.0
Dog Bath Fluffer	8	4	0	0	-100.0	-100.0
Dog Groomer	29	6	12	35	- 58.6	483.3
Farm Manager	13	0	13	0	0.0	0.0
Farmer	6	0	6	0	0.0	0.0
Foreman	34	0	33	0	- 2.9	0.0
Groom	344	47	249	46	- 27.6	- 2.1
Groundskeeper	0	100	0	0	0.0	-100.0
Horse Exerciser	61	7	23	0	- 63.9	-100.0
Horse Race Timer	0	5	0	0	0.0	-100.0
Horseshoer	12	0	12	0	0.0	0.0
Horse Trainer	24	0	18	0	- 25.0	0.0
Hot Walkers	77	7	22	0	- 71.4	-100.0
Kennel Man	194	281	242	256	24.7	- 8.9
Lab. Director	11	0	22	0	100.0	0.0
Lab. Technician (Vet.)	356	27	518	12	45.5	- 55.6
Lab. Technician	35	0	57	0	62.9	0.0
Manager	23	25	29	25	26.1	0.0
Mechanic	11	0	12	0	13.4	0.0
Paddock Judge	0	5	0	0	0.0	-100.0
Plant Technician	44	0	66	0	50.0	0.0

TABLE 41 (continued)

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Receptionist	10	31	18	16	18	60.0	-	41.9
Res. Assoc., Micro.	26	0	0	26	0	0.0	0.0	0.0
Res. Assoc., Para.	13	0	0	13	0	0.0	0.0	0.0
Research Director	11	0	0	22	0	100.0	0.0	0.0
Sales Clerk	18	12	12	25	12	38.9	0.0	0.0
Salesman	143	8	12	232	12	62.2	50.0	50.0
Senior Lab. Tech.	26	0	0	26	0	0.0	0.0	0.0
Sr. Res. Invest., Nut.	13	0	0	13	0	0.0	0.0	0.0
Sr. Res. Invest., Para.	13	0	0	13	0	0.0	0.0	0.0
Stable Boys	0	7	0	0	0	0.0	-100.0	0.0
Truck Driver	6	25	29	25	29	316.7	16.0	16.0
Truck Driver (light)	10	110	0	0	0	-100.0	-100.0	-100.0
Unskilled Laborer	418	152	166	544	166	30.1	9.2	9.2
Veterinarian	561	24	29	562	29	0.0	20.0	20.0
Veterinarian Med. Asst.	0	6	6	6	6	plus	0.0	0.0
Veterinary Nurse	31	25	31	49	31	58.1	24.0	24.0
Total	3,233	1,087	808	3,774	808	- 25.7	256.7	256.7

Animal Health and Care

Animal health and care businessmen projected a 31.1% increase in full-time positions and a 1.2% decrease in seasonal or part-time positions during the five-year period reported in Table 42. They indicated a need for 1,570 full-time workers in 1976 compared with 1,196 in 1971. The estimation for seasonal or part-time workers was 797 in 1976 compared with 807 in 1971. Recruitment needs for replacement and expansion during the five-year period included 557 full-time and 70 seasonal or part-time workers.

Table 43 provides some indications of the educational levels desired by employers for selected job titles. In combination with other areas, it indicates a need for vocational, 2-year collegiate, 4-year collegiate, and short-term courses in addition to the on-the-job training provided by employers.

Table 44 provides information on the 1971 salary characteristics for selected job titles. Although data are limited for some job titles they do provide some impressions of the relative financial rewards of the various jobs.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. None of the employers hired migrants, but 9.4% provided housing for seasonal employees. A large number reported hiring students and some hired housewives. Other workers in this category worked at other jobs or were unemployed during the off-season. Some employers did not comment and some did not hire seasonal or part-time workers.

The employers' views of the future manpower situation in New Jersey included: (1) need trained manpower; and (2) depends on growth of industry. More employers considered the future good than poor, but most did not comment.

TABLE 42
ESTIMATED EMPLOYMENT IN ANIMAL HEALTH AND CARE
SERVICES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Agri. Equip. Oper.	0	6		0	6		0.0	0.0
Animal Caretaker	207	142		302	125		45.9	- 12.0
Dog Bath Fluffer	8	4		0	0		-100.0	-100.0
Dog Groomer	29	6		12	35		- 58.6	483.3
Farmer	6	0		6	0		0.0	0.0
Foreman	27	0		33	0		22.2	0.0
Groom	153	33		139	35		- 9.2	6.1
Horse Exerciser	16	0		16	0		0.0	0.0
Horseshoer	12	0		12	0		0.0	0.0
Horse Trainer	20	0		18	0		- 10.0	0.0
Kennel Man	194	281		242	256		26.7	- 8.9
Lab. Tech. (Vet.)	51	27		104	12		103.9	- 55.6
Manager	23	25		29	25		26.1	0.0
Mechanic	6	0		12	0		100.0	0.0
Receptionist	10	31		16	18		60.0	- 41.9
Salesman	33	8		78	12		136.4	50.0
Sales Clerk	18	12		25	12		38.9	0.0
Truck Driver	6	25		25	29		316.7	16.0
Unskilled Laborer	33	152		49	166		48.5	9.2
Veterinarian	313	24		397	29		26.8	20.1
Veterinary Med. Asst.	0	6		6	6		plus	0.0
Veterinary Nurse	31	25		49	31		58.1	24.0
Total	1,196	807		1,570	797		31.1	- 1.2

TABLE 43

EDUCATIONAL LEVELS DESIRED FOR ANIMAL HEALTH AND CARE
OCCUPATIONS IN NEW JERSEY, 1971

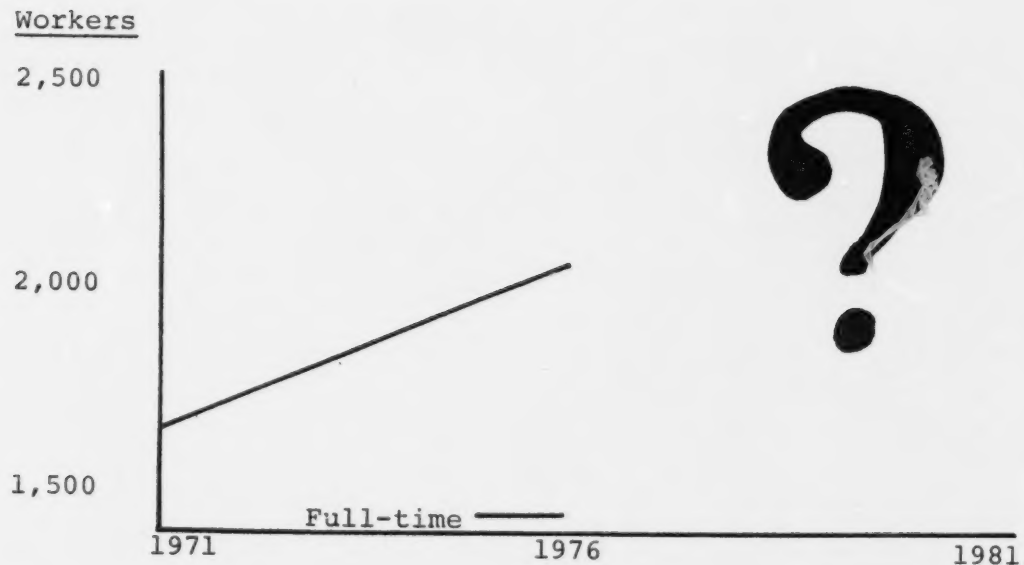
Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Agric. Equip. Oper.	1	0.0	100.0	0.0	0.0	0.0	0.0
Animal Caretaker	11	18.1	54.5	18.1	36.3	0.0	0.0
Dog Bath Fluffer	2	0.0	50.0	50.0	0.0	0.0	0.0
Dog Groomer	3	0.0	100.0	0.0	0.0	0.0	0.0
Foreman	4	0.0	25.0	25.0	100.0	25.0	0.0
Groom	7	14.2	85.7	42.8	14.2	0.0	0.0
Horseshoer	1	0.0	100.0	100.0	0.0	0.0	0.0
Horse Trainer	2	0.0	50.0	50.0	50.0	0.0	0.0
Kennel Man	31	9.6	80.6	6.4	16.1	3.2	0.0
Lab Technician (Vet.)	17	5.8	5.8	23.5	29.4	58.8	5.8
Manager	3	0.0	0.0	0.0	0.0	33.3	66.6
Mechanic	1	0.0	0.0	0.0	100.0	0.0	0.0
Receptionist	2	0.0	100.0	0.0	0.0	0.0	0.0
Sales Clerk	2	0.0	100.0	0.0	0.0	0.0	0.0
Salesman	1	0.0	0.0	0.0	100.0	0.0	0.0
Truck Driver	2	0.0	50.0	0.0	50.0	0.0	0.0
Unskilled Laborer	4	25.0	75.0	25.0	0.0	0.0	0.0
Veterinarian	26	0.0	3.8	3.8	3.8	3.8	100.0
Vet., Med. Asst. Tech.	1	0.0	0.0	0.0	0.0	0.0	100.0
Vet Nurse	2	0.0	50.0	0.0	50.0	0.0	0.0

*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 44

SALARY CHARACTERISTICS FOR ANIMAL HEALTH AND CARE
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary				Potential Maximum Salary			
	No. of		Weekly (dollars)		No. of		Weekly (dollars)	
	Employer Responses		Low	High	Employer Responses		Low	High
Agric. Equip. Oper.	1		100	100	1		125	125
Animal Caretaker	9		50	150	8		110	175
Dog Bath Fluffer	1		75	75	2		100	200
Dog Groomer	2		30	80	2		80	150
Foreman	4		150	170	4		175	200
Groom	7		85	115	8		100	175
Horse Exerciser	1		125	125	1		150	150
Horse Trainer	1		250	250	1		350	350
Kennel Man	27		25	110	26		30	180
Lab. Technician (Vet.)	11		75	125	12		100	200
Manager	3		110	200	3		150	300
Mechanic	1		125	125	1		175	175
Receptionist	1		80	80	1		115	115
Sales Clerk	2		80	100	2		100	150
Salesman	2		100	150	2		200	300
Truck Driver	2		80	125	2		115	150
Unskilled Laborer	5		25	100	5		35	150
Veterinarian	18		185	300	18		250	600
Vet., Med. Asst. Tech.	1		125	125	1		150	150
Vet., Nurse	2		100	100	2		130	150

Pharmaceutical Research

Businessmen involved in pharmaceutical research projected a 21.9% increase in full-time positions during the five-year period reported in Table 45. They indicated a need for 2,052 full-time workers in 1976 compared with 1,684 in 1971. Replacement and expansion for the five-year period showed a need for 555 full-time workers. No seasonal or part-time workers were employed.

Table 46 provides some indications of the educational levels desired by employers for selected job titles. A greater percentage of the job titles required four years of college and less emphasis was placed on on-the-job training than in most business areas, but there was an indication of some need for vocational and

2-year college programs for selected job titles.

Table 47 provides information on the 1971 salary characteristics for selected job titles. Although data are exceptionally limited in respect to the number of employer responses, it does provide some impressions of the relative financial rewards of the various jobs.

The questions on seasonal or part-time workers did not apply because no one was employed in this category.

Employers' views of the future manpower situation in New Jersey indicated: (1) a need for skilled workers; and (2) overall manpower needs were increasing.

TABLE 45

ESTIMATED EMPLOYMENT IN PHARMACEUTICAL RESEARCH BUSINESSES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Animal Caretaker	425	0		540	0		27.1	0.0
Asst. Res. Assoc., Para.	13	0		13	0		0.0	0.0
Farm Manager	13	0		13	0		0.0	0.0
Lab., Director	11	0		22	0		100.0	0.0
Lab. Technician	35	0		57	0		62.9	0.0
Lab. Technician (Vet.)	305	0		414	0		35.7	0.0
Plant Technician	44	0		66	0		50.0	0.0
Research Assoc., Micro.	26	0		26	0		0.0	0.0
Research Assoc., Para.	13	0		13	0		0.0	0.0
Research Director	11	0		22	0		100.0	0.0
Salesman	110	0		154	0		40.0	0.0
Senior Lab. Tech.	26	0		26	0		0.0	0.0
Sr. Res. Inves., Nut.	13	0		13	0		0.0	0.0
Sr. Res. Inves., Para.	13	0		13	0		0.0	0.0
Unskilled Laborer	385	0		495	0		28.6	0.0
Veterinarian	241	0		165	0		- 31.5	0.0
Total	1,684	0		2,052	0		21.9	0.0

TABLE 46

EDUCATIONAL LEVELS DESIRED FOR PHARMACEUTICAL
RESEARCH OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Animal Caretaker	3	0.0	66.6	0.0	33.3	0.0	0.0
Asst. Res. Assoc., Par.	1	0.0	0.0	0.0	0.0	0.0	100.0
Lab Director	1	0.0	0.0	0.0	0.0	0.0	100.0
Lab Technician	2	0.0	0.0	0.0	0.0	50.0	50.0
Lab. Technician (Vet.)	2	0.0	50.0	0.0	0.0	50.0	0.0
Plant Technician	1	0.0	0.0	0.0	100.0	0.0	0.0
Res. Assoc., Micro.	1	0.0	0.0	0.0	0.0	0.0	100.0
Res. Assoc., Para.	1	0.0	0.0	0.0	0.0	0.0	100.0
Research Director	1	0.0	0.0	0.0	0.0	0.0	100.0
Salesman	1	0.0	0.0	0.0	0.0	0.0	100.0
Senior Lab. Tech.	1	0.0	0.0	0.0	0.0	100.0	0.0
Sr. Res. Invest., Nut.	1	0.0	0.0	0.0	0.0	0.0	100.0
Sr. Res. Invest., Para.	1	0.0	0.0	0.0	0.0	0.0	100.0
Veterinarian	3	0.0	0.0	0.0	0.0	0.0	100.0

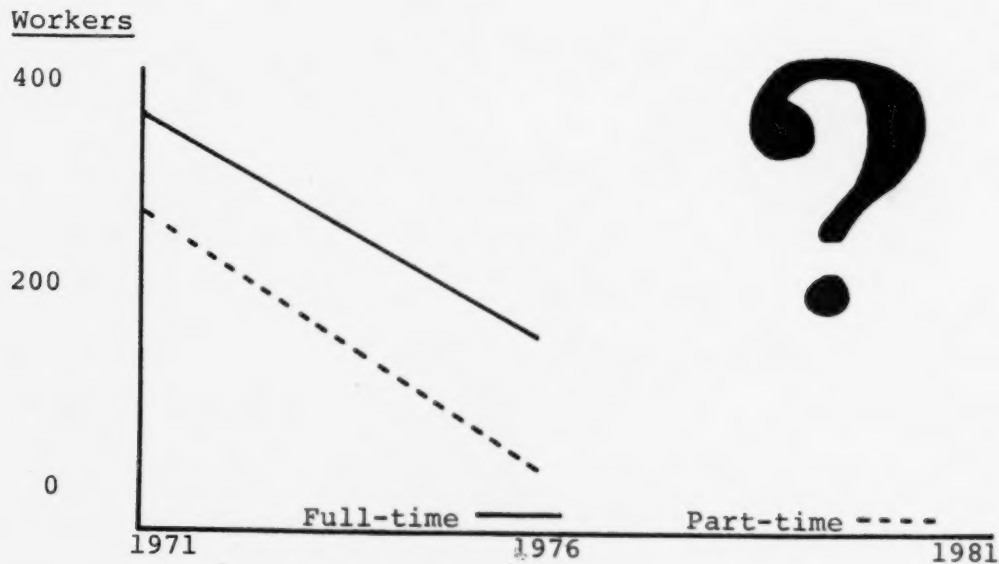
*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 47

SALARY CHARACTERISTICS FOR PHARMACEUTICAL RESEARCH
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Animal Caretaker	3	100	130 113	3	130	136 133
Asst., Res. Assoc., Par.	1	230	230	1	353	353 353
Farm Manager	1	200	200	1	303	303 303
Lab. Director	1	225	225	1	275	275 275
Lab. Technician	1	225	225	2	168	175 171
Plant Technician	1	100	100	1	200	200 200
Res. Assoc., Micro.	1	200	200	1	303	303 303
Res. Assoc., Para.	1	200	200	1	303	303 303
Research Director	1	250	250	1	350	350 350
Salesman	1	200	200	1	350	350 350
Senior Lab. Tech.	1	176	176	1	188	188 188
Sr. Res. Invest., Nut.	1	321	321	1	430	430 430
Sr. Res. Invest., Para.	1	321	321	1	430	430 430
Unskilled Laborer	1	85	85	1	110	110 110

Race Tracks and Stables



Race track and stable employers projected a 56.9% decrease in full-time positions and a 96.1% decrease in part-time positions during the five-year period reported in Table 48. They indicated a decrease in full-time workers from the 1971 estimations of 353 to 1976 projections of 152. The estimation of seasonal or part-time workers was 280 in 1971 compared with 11 in 1976. It should be noted that the projections may have been affected by a very small number of responses since other sources indicate that the actual figures for 1971 are considerably higher than the estimations that were generated in this study.

Table 49 provides some indications of the educational levels desired for selected job titles. It indicates that there is more reliance on on-the-job training than on formal education as

preparation for most of the job titles.

Table 50 provides information on the 1971 salary characteristics of selected job titles. Data are limited, but they do provide some impressions of the relative financial rewards of the various jobs.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. Approximately one-half of the employers provided housing for seasonal employees, but none of the employers reported hiring migrants. Very little information was available on the off-season activities of this segment of the work force.

The employers' views of the future manpower situation ranged from good to poor and included more rigid control of unemployment compensation and the need for trained personnel.

TABLE 48
ESTIMATED EMPLOYMENT IN RACE TRACK AND STABLE
BUSINESSES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Agric. Equip. Oper.	0	25		0	0		0.0	-100.0
Animal Caretaker	7	0		13	0		85.7	0.0
Foreman	7	0		0	0		-100.0	0.0
Groom	191	14		110	11		-42.4	-21.4
Groundskeeper	0	100		0	0		0.0	-100.0
Horse Exerciser	45	7		7	0		-84.4	-100.0
Horse Race Timer	0	5		0	0		0.0	-100.0
Horse Trainer	4	0		0	0		-100.0	0.0
Hot Walkers	77	7		22	0		-71.4	-100.0
Mechanics	5	0		0	0		-100.0	0.0
Paddock Judge	0	5		0	0		0.0	-100.0
Stable Boys	0	7		0	0		0.0	-100.0
Truck Driver (light)	10	110		0	0		-100.0	-100.0
Veterinarian	7	0		0	0		-100.0	0.0
Total	353	280		152	11		-56.9	-96.1

TABLE 49
EDUCATIONAL LEVELS DESIRED FOR RACE TRACKS
AND STABLE OCCUPATIONS IN NEW JERSEY, 1971

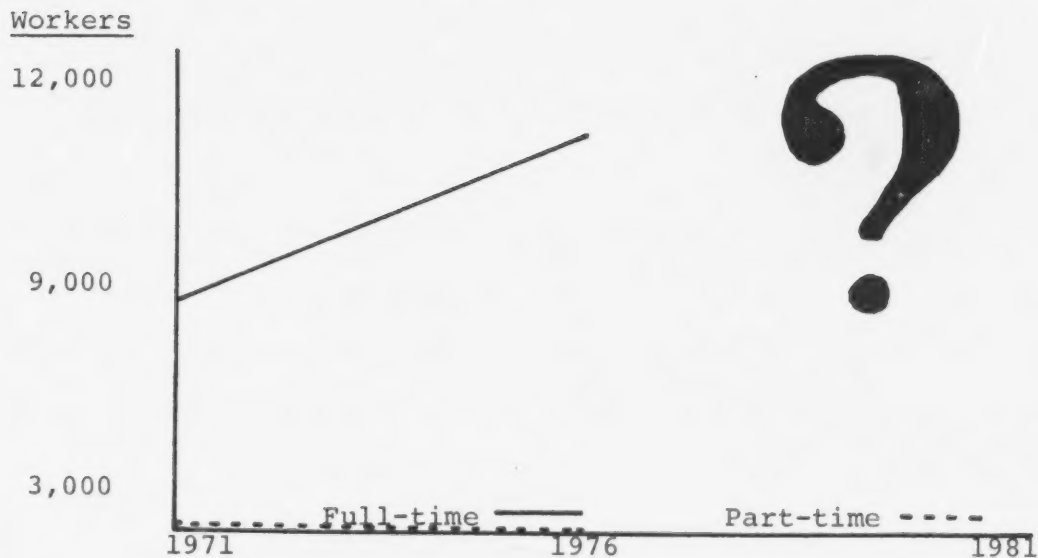
Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Agric. Equip Oper.	1	0.0	100.0	0.0	0.0	0.0	0.0
Animal Caretaker	1	0.0	100.0	0.0	0.0	0.0	0.0
Groom	6	0.0	83.3	16.6	16.6	16.6	0.0
Groundskeeper	1	0.0	100.0	0.0	0.0	0.0	0.0
Horse Exerciser	2	0.0	100.0	50.0	0.0	0.0	0.0
Horse Race Timer	1	0.0	100.0	0.0	0.0	0.0	0.0
Horse Trainer	1	0.0	100.0	0.0	0.0	0.0	0.0
Hot Walker	1	0.0	100.0	0.0	0.0	0.0	0.0
Mechanic	3	0.0	100.0	0.0	0.0	0.0	0.0
Paddock Judge	1	0.0	0.0	100.0	0.0	0.0	0.0
Truck Driver (light)	1	0.0	0.0	100.0	0.0	0.0	0.0
Veterinarian	1	0.0	100.0	0.0	0.0	0.0	100.0

*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 50
SALARY CHARACTERISTICS FOR RACE TRACK AND
STABLE OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)			No. of Employer Responses	Weekly (dollars)
		Low	High	Mean		Low High Mean
Foreman	1	160	160	160	1	160 160 160
Groom	7	70	175	117	6	100 150 125
Horse Exerciser	4	125	175	147	3	150 185 166
Horse Race Timer	1	240	240	240	0	0 0 0
Horse Trainer	1	200	200	200	1	250 250 250
Hot Walker	4	65	100	73	4	65 120 85
Paddock Judge	1	240	240	240	0	0 0 0
Stable Boys	1	75	75	75	0	0 0 0

VII. FOOD PROCESSING INDUSTRY



An increase in demand for people with skills and knowledge in food processing occupations is projected for the five-year period from 1971 to 1976. The estimations in Table 51 combine the areas of meat product processing, dairy product processing, canned fruit and vegetable processing, and grain mill products and services. A 24.3% increase in full-time positions from 8,734 in 1971 to 10,852 in 1976 is expected. An additional 20.8% increase in seasonal or part-time workers from 216 in 1971 to 261 in 1976 is also projected for the same five-year period. Considering a 2% annual replacement rate due to retirement and other factors, 3,097 people will have to be recruited and trained for the 2,118 new positions and the 979 replacement positions to provide the projected manpower needs for full-time

positions. An additional 69 seasonal or part-time workers will be needed for the 45 new positions and 24 replacement positions.

A more detailed analysis of the trends in food processing occupations is available on the following pages. Table 51 provides a composite analysis of the manpower need trends in these occupations by job title. The subsections for meat product processing, dairy product processing, canned fruit and vegetable processing, and grain mill products and services provide trends in manpower needs, educational levels desired by employers, salary characteristics, and additional information on the general manpower situation in New Jersey.

TABLE 51
ESTIMATED EMPLOYMENT IN FOOD PROCESSING INDUSTRY
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Assistant Manager	13	0	13	0	0.0	0.0
Butcher	1081	10	1384	0	28.0	-100.0
Buyer	50	0	50	0	0.0	0.0
Fieldman	21	13	21	9	0.0	- 30.8
Fireman	14	0	14	0	0.0	0.0
General Manager	131	0	120	0	- 8.4	0.0
General Plant Laborer	13	0	22	0	69.2	0.0
Inspector	8	0	17	0	- 28.9	0.0
Lab. Technician	163	4	268	4	64.4	0.0
Main Mechanic/Foreman	550	0	613	0	11.5	0.0
Mechanic Helper	21	0	21	0	0.0	0.0
Mixer Operator	5	0	5	0	0.0	0.0
Office Manager	75	0	75	0	0.0	0.0
Packers	10	10	0	0	-100.0	0.0
Personnel Manager	32	0	42	0	31.3	0.0
Prep. & Canning Super.	9	0	13	0	44.4	0.0
Pressman	151	0	239	0	58.3	0.0
Process. Equip. Oper.	1195	0	1241	0	3.8	0.0
Prod. & Ware. Foreman	417	0	492	0	18.0	0.0
Production Manager	89	0	101	0	13.5	0.0
Quality Control Tech.	131	4	194	4	48.1	0.0

TABLE 51 (continued)

Job Titles	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Route Driver	33	0	42	0	27.3	0.0
Routeman	88	0	88	0	0.0	0.0
Route Salesman	142	0	142	0	0.0	0.0
Sales Manager	75	0	72	0	- 4.0	0.0
Salesman	413	29	492	25	19.1	- 44.2
Ship. & Receiving Clerk	222	0	297	0	33.	0.0
Truck Driver	562	30	790	51	40.6	70.0
Truck Lift Operator	92	0	167	0	81.5	0.0
Unskilled Laborer	2923	116	3812	168	30.4	44.8
Weightmaster	5	0	5	0	0.0	0.0
Total	8,734	216	10,852	261	24.3	20.8

Meat Product Processing

Meat product processing businessmen projected a 26.9% increase in full-time positions and a 9.8% increase in seasonal or part-time positions during the five-year period reported in Table 52. They indicated a need for 6,684 full-time workers in 1976 compared with 5,266 in 1971. The estimation for seasonal or part-time workers was 123 in 1976 compared with 112 in 1971. Recruitment needs for replacement and expansion during the five-year period included 2,016 full-time and 23 seasonal or part-time workers. The majority of the part-time work force was in the unskilled category.

Table 53 provides some indications of the educational levels desired by employers for selected job titles. In combination with other areas, it indicates a need for vocational, 2-year

collegiate, 4-year collegiate, and short-term courses in addition to the on-the-job training provided by employers.

Table 54 provides information on the 1971 salary characteristics for selected job titles. Although data are limited, they do provide some impressions of the relative financial rewards of the various job titles.

The questions on seasonal or part-time workers provided very little information because of the small number of employees in this category.

The employers' views of the future manpower situation in New Jersey included: (1) shortage of skilled labor; and (2) concern over the welfare situation.

TABLE 52
ESTIMATED EMPLOYMENT IN MEAT PRODUCT PROCESSING BUSINESSES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Butcher	1077	10		1375	0		27.7	-100.0
Buyer	33	0		33	0		0.0	0.0
General Manager	43	0		43	0		0.0	0.0
Lab. Technician	132	0		220	0		66.7	0.0
Maint. Mech./Foreman	362	0		384	0		6.1	0.0
Office Manager	32	0		32	0		0.0	0.0
Packers	10	10		0	0		-100.0	-100.0
Personnel Manager	11	0		11	0		0.0	0.0
Pressman	132	0		220	0		72.7	0.0
Process. Equip. Oper.	978	0		999	0		2.1	0.0
Prod. & Ware. Foreman	241	0		285	0		18.3	0.0
Production Manager	22	0		32	0		45.4	0.0
Quality Control Tech.	110	0		165	0		50.0	0.0
Sales Manager	11	0		11	0		0.0	0.0
Salesmen	143	0		186	0		30.1	0.0
Ship. & Receiving Clerk	120	0		164	0		36.7	0.0
Truck Driver	153	0		261	0		70.6	0.0
Truck Lift Operator	11	0		44	0		300.0	0.0
Unskilled Laborer	1645	92		2219	123		34.9	33.7
Total	5,266	112		6,684	123		26.9	9.8

TABLE 53

EDUCATIONAL LEVELS DESIRED FOR MEAT PRODUCT
PROCESSING OCCUPATIONS IN NEW JERSEY, 1971

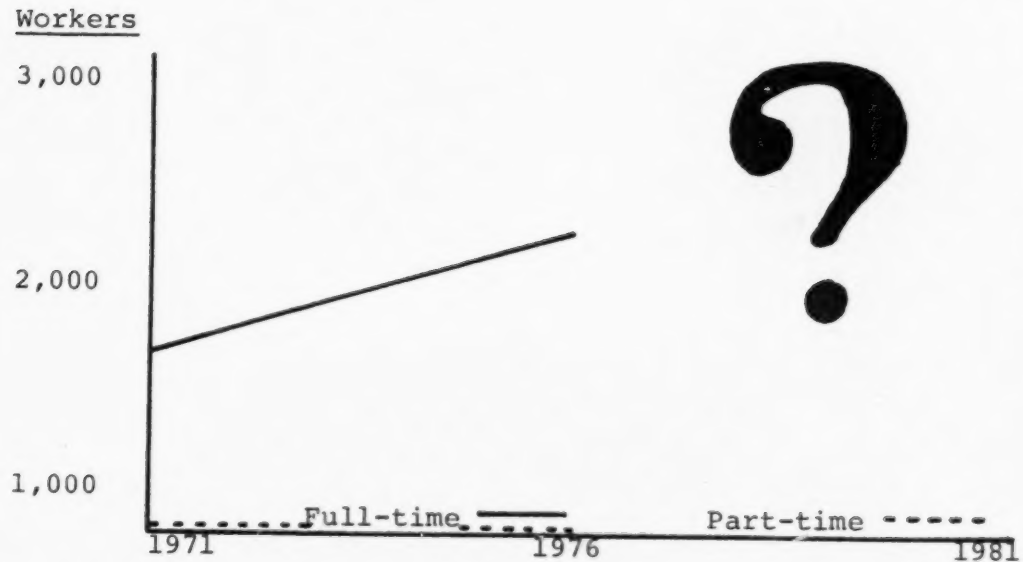
No. of		Percent of Employers Specifying Each Educational Level *					
Job Titles	Employer Responses	None	On-The-Job	Short Courses	High School Vocational	2-Year College	4-Year College
Butcher	3	0.0	100.0	0.0	0.0	0.0	0.0
Buyer	1	0.0	0.0	0.0	0.0	0.0	0.0
General Manager	3	0.0	33.3	0.0	0.0	33.3	33.3
Lab. Technician	1	0.0	0.0	0.0	0.0	100.0	0.0
Main./Foreman	3	0.0	33.3	33.3	66.6	0.0	0.0
Office Manager	2	0.0	0.0	0.0	0.0	50.0	50.0
Packers	1	0.0	100.0	0.0	0.0	0.0	0.0
Personnel Manager	1	0.0	0.0	0.0	0.0	0.0	100.0
Pressman	2	0.0	100.0	0.0	0.0	0.0	0.0
Process. Equip. Oper.	3	0.0	100.0	0.0	0.0	0.0	0.0
Prod. & Ware. Foreman	4	0.0	50.0	0.0	50.0	0.0	0.0
Production Manager	2	0.0	0.0	0.0	50.0	0.0	0.0
Quality Control Tech.	1	0.0	0.0	0.0	0.0	100.0	0.0
Sales Manager	1	0.0	0.0	0.0	0.0	0.0	100.0
Salesman	2	0.0	0.0	0.0	0.0	50.0	50.0
Ship. & Receiving Clerk	4	0.0	75.0	0.0	25.0	0.0	0.0
Truck Driver	2	0.0	100.0	0.0	0.0	0.0	0.0
Truck Lift Operator	2	0.0	100.0	0.0	0.0	0.0	0.0
Unskilled Laborer	7	28.5	85.7	0.0	0.0	0.0	0.0

* May add to more than 100 percent since employees may have indicated more than one level for some jobs.

TABLE 54

SALARY CHARACTERISTICS FOR MEAT PRODUCT PROCESSING
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of		Weekly (dollars)	No. of		Weekly (dollars)
	Employer Responses	Mean		Employer Responses	Mean	
Butcher	3	130	145	2	176	185
Buyer	2	200	250	2	400	400
General Manager	3	180	200	2	300	325
Lab. Technician	1	110	110	1	160	160
Main. Mech./Foreman	4	140	180	4	180	200
Office Manager	3	120	180	3	190	221
Packers	1	90	90			
Pressman	2	132	132	4	130	152
Prod. & Ware. Foreman	5	120	200	5	180	247
Production Manager	3	150	300	3	220	336
Quality Control Tech.	1	110	110	1	160	160
Sales Manager	1	350	350	1	500	500
Salesman	2	150	200	2	350	375
Ship & Receiving Clerk	5	120	150	4	150	193
Truck Driver	3	120	160	3	160	209
Truck Lift Operator	2	120	140	2	172	178
Unskilled Laborer	6	100	135	4	130	152

Dairy Product Processing

Dairy product processing businessmen projected a 27.2% increase in full-time positions and a 70.8% increase in seasonal or part-time positions during the five-year period reported in Table 55. They indicated a need for 2,079 full-time workers in 1976 compared with 1,634 in 1971. The estimation for seasonal or part-time workers was 111 in 1976 compared with 65 in 1971. Recruitment needs for replacement and expansion included 631 full-time and 55 seasonal or part-time workers during the five-year period. It should be noted that these figures do not include the 10.5% of the businesses that were reported as family operated without any references to job titles or 1976 projections.

Table 56 provides some indications of the educational levels desired by employers for selected job titles. In combination with other areas, it indicates a need for vocational, 2-year collegiate, 4-year collegiate, and short-term courses in addition to the on-the-job training provided by employers.

Table 57 provides information on the 1971 salary characteristics for selected job titles. Although data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

The questions on seasonal or part-time employees provided very little information because of the small number of employees in this category.

The employers' views of the future manpower situation in New Jersey included: (1) shortage of trained people; (2) competition for manpower because of industrial growth; and (3) unions demand too much. Approximately 50% did not comment.

TABLE 55

ESTIMATED EMPLOYMENT IN DAIRY PRODUCT PROCESSING BUSINESSES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Assistant Manager	8	0		8	0		0.0	0.0
Buyer	4	0		4	0		0.0	0.0
Fieldman	21	4		21	4		0.0	0.0
General Manager	38	0		27	0		- 28.9	0.0
Inspector	8	0		17	0		112.5	0.0
Lab. Technician	21	4		38	4		81.0	0.0
Maint. Mech./Foreman	63	0		104	0		65.0	0.0
Mechanic Helper	21	0		21	0		0.0	0.0
Office Manager	23	0		23	0		0.0	0.0
Personnel Manager	13	0		23	0		76.9	0.0
Prep. & Canning Super.	4	0		8	0		100.0	0.0
Process. Equip. Oper.	75	0		92	0		22.7	0.0
Prod. & Ware. Foreman	48	0		65	0		35.4	0.0
Production Manager	36	0		29	0		- 19.4	0.0
Quality Control Tech.	13	4		21	4		61.5	0.0
Route Driver	33	0		42	0		27.3	0.0
Route Salesman	142	0		142	0		0.0	0.0
Routeman	88	0		88	0		0.0	0.0
Sales Manager	59	0		56	0		- 5.1	0.0
Salesman	242	21		238	25		- 1.7	19.0
Ship. & Receiving Clerk	75	0		106	0		41.3	0.0
Truck Driver	276	21		391	42		41.7	100.0
Truck Lift Operator	29	0		71	0		144.8	0.0
Unskilled Laborer	294	11		444	32		51.0	190.9
Total	1,634	65		2,079	111		27.2	70.8

TABLE 56

EDUCATIONAL LEVELS DESIRED FOR DAIRY PRODUCT
PROCESSING OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level *					
		None	On-The Job	Short Courses	High School Vocational	2-Year College	4-Year College
Assistant Manager	2	0.0	50.0	0.0	0.0	0.0	50.0
Buyer	1	0.0	0.0	0.0	0.0	100.0	0.0
Fieldman	3	0.0	0.0	0.0	0.0	100.0	0.0
General Manager	2	0.0	50.0	0.0	0.0	0.0	50.0
Inspector	1	0.0	0.0	0.0	0.0	100.0	0.0
Lab. Technician	3	0.0	0.0	0.0	0.0	66.6	33.3
Main. Mech./Foreman	5	0.0	40.0	0.0	40.0	20.0	0.0
Mechanic Helper	1	0.0	100.0	0.0	100.0	0.0	0.0
Office Manager	2	0.0	0.0	0.0	0.0	0.0	100.0
Personnel Manager	1	0.0	0.0	0.0	0.0	0.0	100.0
Process Equip. Oper.	4	0.0	100.0	0.0	25.0	0.0	0.0
Production Manager	5	0.0	20.0	0.0	0.0	20.0	60.0
Prod. Warehouse Foreman	2	0.0	100.0	0.0	0.0	0.0	0.0
Quality Control Tech.	3	0.0	0.0	0.0	0.0	33.3	66.6
Route Driver	1	0.0	100.0	0.0	0.0	0.0	0.0
Route Man	1	0.0	100.0	0.0	0.0	0.0	0.0
Salesman	6	0.0	33.3	0.0	50.0	33.3	0.0
Sales Manager	4	0.0	25.0	0.0	0.0	50.0	25.0
Ship Receiving Clerk	4	0.0	75.0	0.0	25.0	0.0	0.0
Truck Driver	4	0.0	100.0	0.0	25.0	0.0	0.0
Truck Lift Operator	2	0.0	100.0	0.0	0.0	0.0	0.0
Unskilled Laborer	6	33.3	66.6	0.0	0.0	0.0	0.0

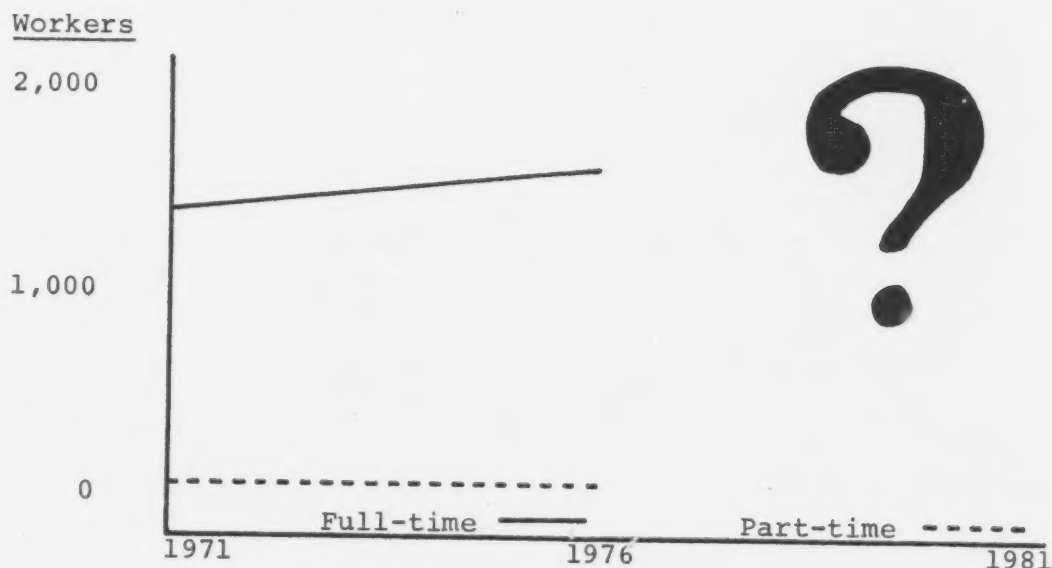
* May add to more than 100 percent since employees may have indicated more than one level for some jobs.

TABLE 57

SALARY CHARACTERISTICS FOR DAIRY PRODUCT PROCESSING
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Assistant Manager	2	145	200	2	183	300
Buyer	1	150	150	1	200	200
Fieldman	2	125	140	2	175	200
General Manager	1	150	150	1	300	300
Lab. Technician	1	130	130	1	175	175
Main. Mech./Foreman	3	130	200	3	176	250
Mechanic Helper	1	190	190	1	205	205
Office Manager	1	200	200	1	250	250
Personnel Manager	1	150	150	1	200	200
Prep. & Canning Super.	1	92	92	1	96	96
Process Equip. Oper.	2	92	140	2	96	176
Production Manager	4	250	300	4	290	400
Prod. Warehouse Foreman	1	150	150	1	200	200
Quality Control Tech.	2	130	150	2	176	200
Route Driver	1	130	130	1	200	200
Route Man	1	157	157	1	157	157
Route Salesman	1	200	200	1	157	157
Salesman	4	120	150	4	185	225
Sales Manager	4	175	250	3	250	300
Ship Receiving Clerk	4	100	182	3	145	160
Truck Driver	2	150	180	2	210	225
Truck Lift Operator	1	92	92	1	96	96
Unskilled Laborer	5	75	175	5	75	200

Canned Fruit and Vegetable Processing



Canned fruit and vegetable processing businessmen projected a 16.0% increase in full-time positions and no change in seasonal or part-time jobs during the five-year period reported in Table 58. They indicated a need for 1,594 full-time workers in 1976 compared with 1,374 in 1971. The need for seasonal or part-time workers remained at 22 for the same five-year period. Recruitment needs for replacement and expansion during the five-year period included 368 full-time and 2 seasonal or part-time workers.

Table 59 provides some indications of the educational levels desired by employers for selected job titles. In combination with other areas, it indicates a need for vocational,

2-year collegiate, 4-year collegiate, and short-term courses in addition to the on-the-job training provided by employers.

Table 60 provides information on the 1971 salary characteristics for selected job titles. Although data are limited, they do provide some impressions of the relative financial rewards of the various job titles.

The questions on seasonal or part-time employment provided very little information because of the small number of employees in this category.

The employers' views of the future manpower situation in New Jersey included: (1) need for more skilled labor; and (2) competition for manpower because of industrial growth.

TABLE 58

ESTIMATED EMPLOYMENT IN CANNED FRUIT AND VEGETABLE PROCESSING BUSINESSES
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	
Butcher	4	0		9	0		125.0
General Manager	19	0		19	0		0.0
General Plant Labor	13	0		22	0		69.2
Lab. Technician	10	0		10	0		0.0
Maint. Mech./Foreman	81	0		81	0		0.0
Office Manager	7	0		7	0		0.0
Personnel Manager	3	0		3	0		0.0
Process. Equip. Oper.	119	0		127	0		6.7
Prod. Manager	18	0		27	0		50.0
Prod. & Warehouse Foreman	114	0		128	0		12.3
Quality Control Tech.	3	0		3	0		0.0
Salesman	7	0		7	0		0.0
Shipping & Receiving Clerk	10	0		10	0		0.0
Truck Driver	14	9		19	9		35.7
Truck Lift Oper.	47	0		47	0		0.0
Unskilled Laborer	905	13		1075	13		18.8
Total	1,374	22		1,594	22		16.0
							0.0

TABLE 59

EDUCATIONAL LEVELS DESIRED FOR CANNED FRUIT AND VEGETABLE
PROCESSING OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level *					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Butcher	1	0.0	0.0	0.0	100.0	0.0	0.0
General Manager	2	0.0	0.0	0.0	0.0	100.0	0.0
Lab Technician	2	0.0	0.0	0.0	100.0	0.0	0.0
Main.Mech./Foreman	2	0.0	0.0	50.0	50.0	0.0	0.0
Office Manager	1	0.0	0.0	0.0	0.0	0.0	100.0
Personnel Manager	1	0.0	0.0	0.0	0.0	0.0	100.0
Process. Equip. Oper	2	0.0	50.0	0.0	50.0	0.0	0.0
Production Manager	3	0.0	0.0	0.0	66.6	0.0	33.3
Prod. & Warehouse Foreman	2	0.0	0.0	0.0	100.0	0.0	0.0
Quality Control Tech.	1	0.0	0.0	0.0	100.0	0.0	0.0
Ship. & Receiving Clerk	2	0.0	0.0	0.0	100.0	0.0	0.0
Truck Driver	2	50.0	0.0	0.0	50.0	0.0	0.0
Truck Lift Operator	2	0.0	0.0	100.0	0.0	0.0	0.0
Unskilled Laborer	5	20.0	80.0	0.0	0.0	0.0	0.0

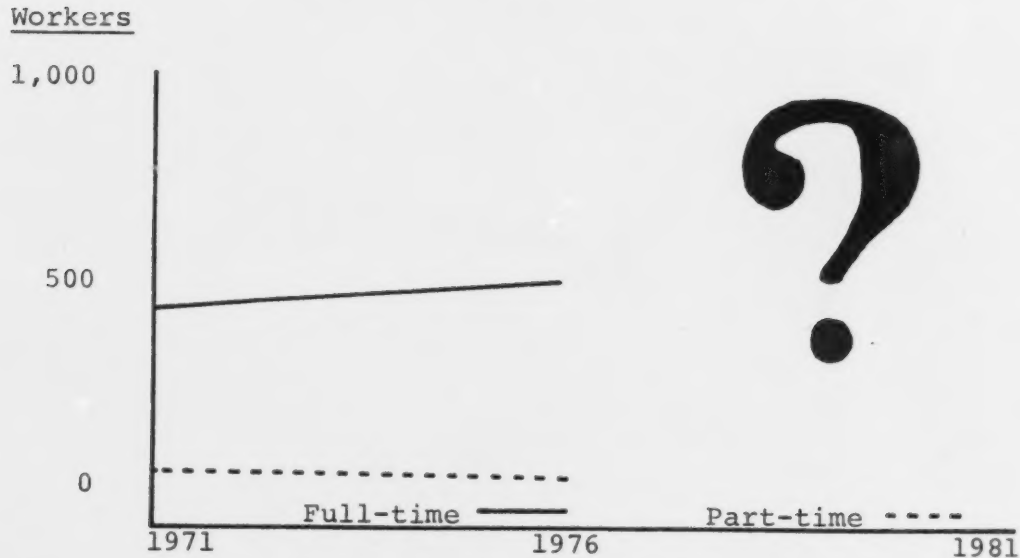
* May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 60

SALARY CHARACTERISTICS FOR CANNED FRUIT AND VEGETABLE
PROCESSING OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Butcher	1	120	120	1	130	130
General Manager	2	200	300 250	2	275	400 337
General Plant Laborer	1	100	100 100	1	125	125
Lab. Technician	2	110	120 115	2	140	155 147
Main. Mech./Foreman	2	125	150 137	2	200	250 225
Office Manager	1	150	150 150	1	200	200 200
Personnel Manager	1	150	150 150	1	200	200 200
Process Equip. Oper.	2	100	100 100	2	120	145 132
Production Manager	3	130	200 168	3	150	275 225
Prod. & Warehouse Foreman	2	150	150 150	2	200	200 200
Quality Control Tech.	1	120	120 120	1	155	155 155
Ship. & Receiving Clerk	2	100	120 110	2	140	170 155
Truck Driver	1	110	110 110	2	130	180 155
Truck Lift Operator	2	100	125 112	2	125	180 152
Unskilled Laborer	4	85	90 88	5	100	130 114

Grain Mill Products and Services



The occupations involved in the processing of grain mill products are expected to remain relatively stable in the five-year period reported in Table 61. Even though a 7.6% increase in full-time positions and a 70.6% decrease in seasonal or part-time positions were projected, the number of people involved is relatively small. An increase from 460 in 1971 to 495 was projected in the full-time positions, and 5 part-time or seasonal positions are projected for 1976 compared with 17 for 1971.

Table 62 provides some indications of the educational levels desired by employers for selected job titles. It is apparent that there is great diversity in the educational requirements among these job titles.

Table 63 provides information on the 1971 salary characteristics of selected job titles. Data are limited, but they do provide some impressions of the relative financial rewards of the various jobs.

The questions on seasonal or part-time employment provided very little information because of the small number of employees in this category.

There was very little response to the question on the future manpower situation in New Jersey.

TABLE 61
ESTIMATED EMPLOYMENT IN GRAIN MILL PRODUCT PROCESSING
BUSINESSES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Assistant Manager	5	0		5	0		0.0	0.0
Buyer	13	0		13	0		0.0	0.0
Fieldman	0	9		0	5		0.0	- 44.4
Fireman	14	0		14	0		0.0	0.0
General Manager	31	0		31	0		0.0	0.0
Main. Mechanic/Foreman	44	0		44	0		0.0	0.0
Mixer Operator	5	0		5	0		0.0	0.0
Office Manager	13	0		13	0		0.0	0.0
Personnel Manager	5	0		5	0		0.0	0.0
Prep. & Canning Super.	5	0		5	0		0.0	0.0
Pressman	19	0		19	0		0.0	0.0
Process. Equip. Oper.	23	0		23	0		0.0	0.0
Production Manager	13	0		13	0		0.0	0.0
Prod. & Ware. Foreman	14	0		14	0		0.0	0.0
Quality Control Tech.	5	0		5	0		0.0	0.0
Salesman	21	8		61	0		190.5	-100.0
Sales Manager	5	0		5	0		0.0	0.0
Ship Receiving Clerk	17	0		17	0		0.0	0.0
Truck Driver	119	0		119	0		0.0	0.0
Truck Lift Operator	5	0		5	0		0.0	0.0
Unskilled Laborer	79	0		74	0		- 6.3	0.0
Weightmaster	5	0		5	0		0.0	0.0
Total	460	17		495	5		7.6	- 70.6

TABLE 62

EDUCATIONAL LEVELS DESIRED FOR GRAIN MILL, PRODUCT
PROCESSING OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Assistant Manager	1	0.0	0.0	0.0	0.0	100.0	0.0
Buyer	2	0.0	50.0	0.0	100.0	0.0	0.0
Fieldman	2	0.0	0.0	0.0	100.0	0.0	0.0
General Manager	3	0.0	0.0	0.0	33.3	33.3	33.3
Main. Mechanic/Foreman	4	0.0	25.0	0.0	75.0	0.0	0.0
Mixer Operator	1	0.0	0.0	0.0	100.0	0.0	0.0
Office Manager	2	0.0	0.0	0.0	50.0	100.0	0.0
Prep. & Canning Super.	1	0.0	100.0	0.0	0.0	0.0	0.0
Process. Equip. Oper.	1	0.0	100.0	0.0	0.0	0.0	0.0
Production Manager	1	0.0	0.0	0.0	100.0	0.0	0.0
Prod. & Ware. Foreman	2	50.0	0.0	0.0	50.0	0.0	0.0
Quality Control Tech.	1	0.0	0.0	0.0	100.0	100.0	0.0
Sales Manager	1	0.0	0.0	0.0	0.0	100.0	0.0
Salesman	2	50.0	0.0	0.0	50.0	0.0	0.0
Ship Receiving Clerk	2	0.0	50.0	0.0	50.0	0.0	0.0
Truck Driver	4	25.0	25.0	0.0	50.0	0.0	0.0
Truck Lift Operator	1	100.0	0.0	0.0	0.0	0.0	0.0
Unskilled Laborer	2	0.0	50.0	0.0	50.0	0.0	0.0
Weightmaster	1	0.0	0.0	0.0	100.0	0.0	0.0

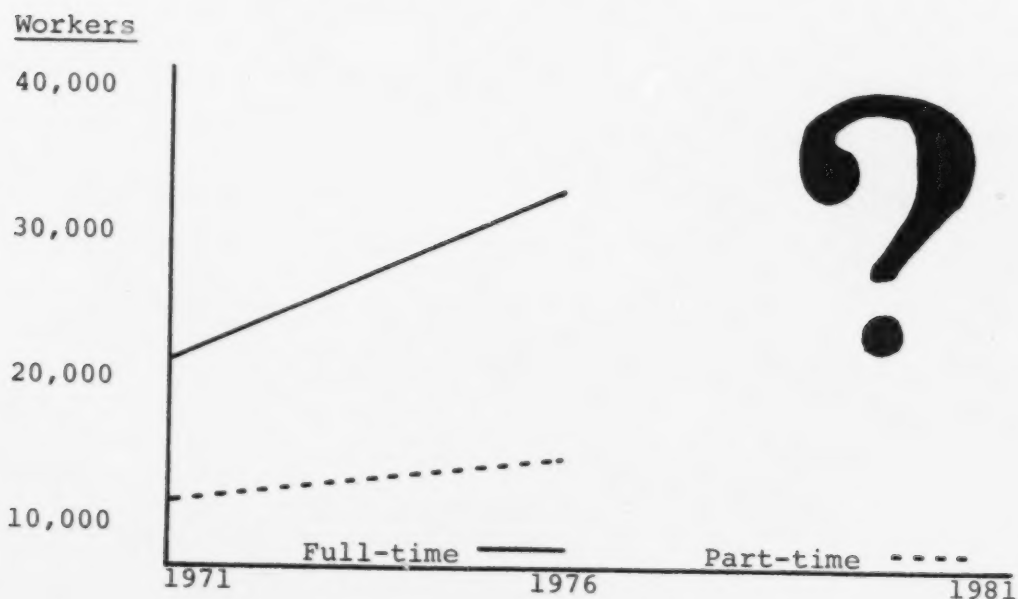
*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 63

SALARY CHARACTERISTICS FOR GRAIN MILL PRODUCT
PROCESSING OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Assistant Manager	1	200	200	1	250	250
Buyer	2	125	200 162	2	175	187
Fieldman	2	50	100 75	2	50	125 87
General Manager	3	270	300 290	4	250	350 298
Main. Mechanic/Foreman	4	110	290 145	4	145	220 178
Mixer Operator	1	200	200	1	220	220
Office Manager	2	130	150 140	2	130	175 152
Personnel Manager	0	0	0	1	150	150 150
Prep. & Canning Super.	1	100	100 100	1	200	200 200
Process. Equip. Oper.	1	105	105 105	1	115	115 115
Production Manager	1	150	150 150	2	150	200 175
Prod. & Ware. Foreman	2	125	220 172	2	150	250 200
Quality Control Tech.	1	130	130 130	1	150	150 150
Salesman	2	125	135 130	2	135	150 142
Sales Manager	1	240	240 240	1	265	265 265
Ship Receiving Clerk	2	120	120 120	2	120	130 125
Truck Driver	3	110	200 145	3	110	220 160
Truck Lift Operator	1	105	105 105	1	115	115 115
Unskilled Laborer	1	175	175 175	1	195	195 195
Weightmaster	1	200	200 200	1	220	220 220

VIII. FOOD DISTRIBUTION INDUSTRY



An increase in demand for people with skills and knowledge in food distribution occupations is projected for the five-year period from 1971 to 1976. The estimations in Table 64 combine the wholesale and retail food distribution areas. A 55.0% increase in full-time positions from 20,762 in 1971 to 32,173 in 1976 was projected. They also projected an additional 15.9% increase in seasonal or part-time workers from 11,300 in 1971 to 13,105 in 1976 for the same five-year period. Considering a 2% annual replacement rate due to retirement and other factors, 14,058 people will have to be recruited and trained for the 11,411 new positions and the 2,647 replacement positions to provide the projected manpower needs for full-time positions.

An additional 2,025 seasonal or part-time workers will be needed for the 1,805 new positions and 1,220 replacement positions.

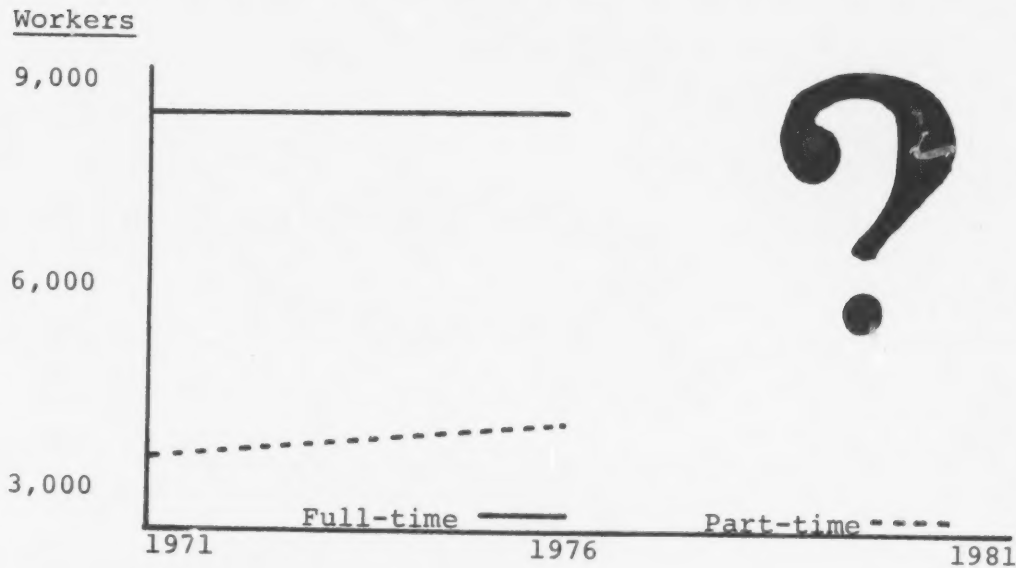
A more detailed analysis of the trends in food distribution occupations is available on the following pages. Table 64 provides a composite analysis of the manpower need trends in these occupations by job title. The sub-sections for wholesale and retail food distribution provide trends for manpower needs, educational levels desired by employers, salary characteristics, and additional information on the general manpower situation in New Jersey.

TABLE 64
ESTIMATED EMPLOYMENT IN FOOD DISTRIBUTION INDUSTRY
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Butcher	169	0		169	0		0.0	0.0
Buyer, Meat Products	560	39		450	20		- 19.6	- 48.7
Commission Man	76	0		86	0		13.2	0.0
Dairy Clerk	482	607		596	809		23.7	33.3
Dairy Manager	50	88		50	117		0.0	33.0
Deli. Counterman	185	20		129	20		- 30.3	0.0
Deli. Manager	61	0		100	20		63.9	Plus
Equipment Operator	365	183		386	194		5.8	6.1
Foreman	20	0		20	0		0.0	0.0
Foreman, Warehouse	214	10		164	20		- 23.4	100.0
Frozen Food Manager	369	0		369	0		0.0	0.0
Grocery Dept. Head	53	0		53	0		0.0	0.0
Grocery Employees	288	320		309	128		7.3	- 60.0
Manager, Pack./Storage	194	0		157	0		- 19.1	0.0
Manager, Retail	2131	1255		3660	190		71.8	- 84.7
Manager, Whlse./Pack.	11	21		11	11		0.0	- 47.6
Materials Handler	116	0		0	0		-100.0	0.0
Meat Clerk	1195	1322		3510	2769		193.7	109.5
Meat Cutter	4247	948		7470	825		75.9	- 13.0
Meat Dept. Head	684	11		1413	0		106.6	-100.0
Meat Trimmer	50	20		40	20		- 20.0	0.0
Meat Wrapper	20	0		40	0		100.0	0.0
Packer	363	0		70	0		- 80.7	0.0
Produce Clerk	1297	2009		3332	2113		156.9	5.2

TABLE 64 (continued)

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Produce Dept. Head	559	96		1393	21		149.2	- 78.1
Route Driver	1141	773		2010	1625		76.2	110.2
Salesman, Food Prod.	1853	168		2240	275		20.9	63.7
Salesman, Livestock	59	0		59	0		0.0	0.0
Truck Driver	2250	478		2399	570		6.6	25.6
Unskilled Laborer	1452	2932		1230	3358		- 15.3	14.5
Warehouseman	248	0		258	0		4.0	0.0
Total	20,762	11,300		32,173	13,105		55.0	15.9

Wholesale Food Distribution

Wholesale food distribution businessmen projected no change in full-time positions and a 24.3% increase in seasonal or part-time positions during the five-year period reported in Table 65. The estimation for full-time workers was 8,613 and 8,614 respectively for 1971 and 1976. The estimations for seasonal or part-time workers was 4,013 in 1976 compared with 3,228 in 1971. Recruitment needs for replacement and expansion during the five-year period included 861 full-time workers and 1,147 seasonal or part-time workers. It should be noted that these figures do not include the 11.3% of the businesses that were reported as family operated without any reference to job titles or 1976 projections.

Table 66 provides some indications of the educational levels desired by employers for selected job titles. The entire range of educational levels is represented, but the majority of the workers received on-the-job training.

Table 67 provides information on the 1971 salary characteristics of selected job titles. Although data are limited, they do provide some impressions of the relative financial rewards of the various job titles.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. Off-season activities of this segment of the work force included school, other jobs, and welfare or unemployment.

Employers' views of the future manpower situation in New Jersey included: (1) lack of skilled labor; and (2) depends on growth of the industry.

TABLE 65

ESTIMATED EMPLOYMENT IN WHOLESALE FOOD DISTRIBUTION
SERVICES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Buyer, Meat Products	317	39		386	20		21.8	- 48.7
Commission Man	76	0		86	0		13.2	0.0
Dairy Manager	29	88		29	117		0.0	33.0
Deli. Counterman	129	20		129	20		0.0	0.0
Deli. Manager	40	0		79	20		97.5	Plus
Equipment Operator	199	60		199	60		0.0	0.0
Foreman	20	0		20	0		0.0	0.0
Foreman, Warehouse	214	10		164	20		- 23.4	100.0
Frozen Food Manager	348	0		348	0		0.0	0.0
Manager, Pack./Storage	194	0		157	0		- 19.1	0.0
Materials Handler	60	0		0	0		-100.0	0.0
Meat Clerk	29	0		29	0		0.0	0.0
Meat Cutter	411	0		441	29		7.3	Plus
Meat Dept. Head	69	0		49	0		- 29.0	0.0
Meat Trimmer	50	20		40	20		- 20.0	0.0
Meat Wrappers	20	0		40	0		100.0	0.0
Packers	328	0		0	0		-100.0	0.0
Route Driver	694	27		870	27		25.4	0.0
Salesman, Food Prod.	1719	147		2096	187		21.9	27.2
Salesman, Livestock	59	0		59	0		0.0	0.0
Truck Driver	2025	295		2075	401		2.5	35.9
Unskilled Laborer	1335	2522		1060	3092		- 20.6	22.6
Warehouseman	248	0		258	0		4.0	0.0
Total	8,613	3,228		8,614	4,013		0.0	24.3

TABLE 66

EDUCATIONAL LEVELS DESIRED FOR WHOLESALE FOOD
DISTRIBUTION OCCUPATIONS IN NEW JERSEY, 1971

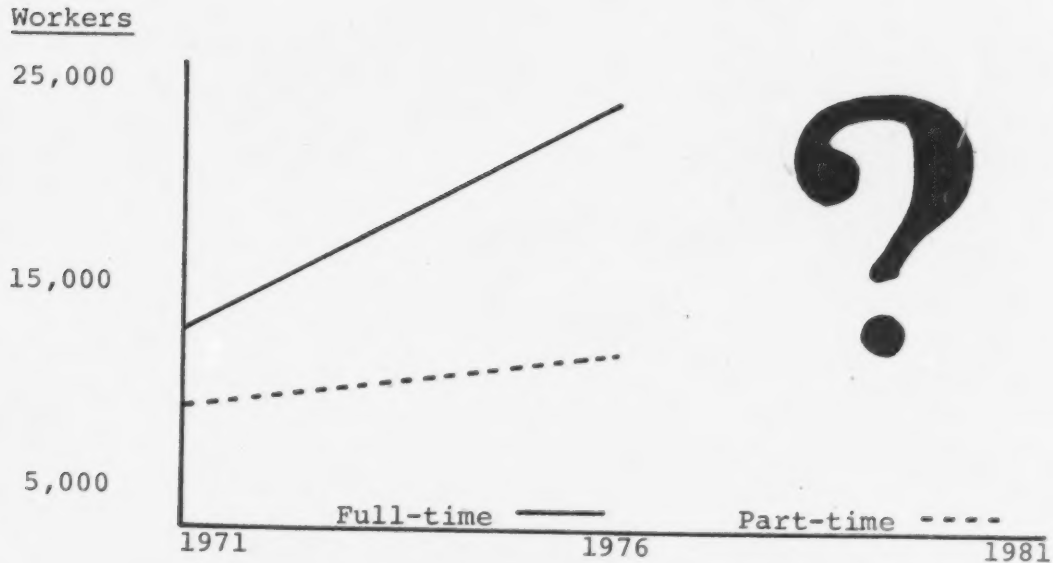
Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Buyer, Meat Products	12	8.3	75.0	0.0	8.3	0.0	0.0
Commission Man	2	0.0	100.0	0.0	0.0	0.0	0.0
Dairy Manager	1	100.0	0.0	0.0	0.0	0.0	0.0
Deli. Counterman	1	100.0	0.0	0.0	0.0	0.0	0.0
Deli. Manager	2	0.0	100.0	0.0	0.0	0.0	0.0
Equipment Operator	1	100.0	0.0	0.0	0.0	0.0	0.0
Foreman	1	0.0	100.0	0.0	0.0	0.0	0.0
Foreman, Warehouse	11	9.0	54.5	9.0	27.2	0.0	0.0
Frozen Food Manager	1	0.0	100.0	0.0	0.0	0.0	0.0
Manager, Warehouse Pack.	7	0.0	100.0	0.0	0.0	14.2	0.0
Meat Clerk	1	0.0	100.0	0.0	0.0	0.0	0.0
Meat Cutter	6	0.0	83.3	0.0	0.0	16.6	0.0
Meat Dept. Head	3	0.0	66.6	33.3	0.0	0.0	0.0
Meat Trimmer	1	0.0	100.0	0.0	0.0	0.0	0.0
Meat Wrapper	1	0.0	100.0	0.0	0.0	0.0	0.0
Route Driver	3	0.0	100.0	0.0	0.0	0.0	0.0
Salesman, Food Prod.	26	7.6	53.8	7.6	11.5	15.3	11.5
Salesman, Livestock	1	100.0	0.0	0.0	0.0	0.0	0.0
Truck Driver	22	22.7	59.0	4.5	13.6	0.0	0.0
Unskilled Laborer	15	20.0	66.6	0.0	13.3	0.0	0.0
Warehouseman	1	0.0	100.0	0.0	0.0	0.0	0.0

*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 67

SALARY CHARACTERISTICS FOR WHOLESALE FOOD
DISTRIBUTION OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Buyer, Meat Products	9	100	500 238	10	175	500 283
Commission Man	1	125	125	0	0	0
Dairy Manager	1	80	80	1	160	160
Deli. Counterman	2	100	145 122	2	125	250 187
Deli. Manager	2	90	158 124	2	100	206 153
Equipment Operator	1	150	150	1	167	167
Foreman	1	150	150	1	280	280
Foreman, Warehouse	11	120	200 155	12	150	350 203
Frozen Food Manager	1	120	120	1	130	130
Manager, Warehouse, Pack.	8	125	300 194	8	150	350 232
Materials Handler	1	110	110	1	138	138
Meat Clerk	1	130	130	1	250	250
Meat Cutter	4	120	200 159	4	167	225 200
Meat Dept. Head	2	140	180 160	2	180	190 185
Meat Trimmer	1	150	150	1	250	250
Meat Wrapper	1	85	85	1	91	91
Packer	1	90	90	1	130	130
Route Driver	3	120	200 156	3	165	400 245
Salesman, Food Prod.	24	100	225 136	23	130	600 261
Salesman, Livestock	1	125	125	1	200	200
Truck Driver	22	75	225 136	23	85	325 177
Unskilled Laborer	14	50	220 109	14	75	300 147
Warehouseman	1	150	150	1	198	198

Retail Food Distribution

Retail food distribution businessmen projected a 93.9% increase in full-time positions and a 12.6% increase in seasonal or part-time positions during the five year period reported in Table 68. They indicated a need for 23,559 full-time workers in 1976 compared with 12,149 in 1971. The estimation for seasonal or part-time workers was 9,092 in 1976 compared with 8,072 in 1971. Recruitment needs for replacement and expansion during the five-year period included 13,195 full-time and 4,119 seasonal or part-time workers. The areas of greatest need appeared to be for retail managers and for employees in the meat and produce departments. It should be noted that these figures do not include the 21.1% of the businesses that were reported as family operated without any reference to job titles or 1976 projections.

Table 69 provides some indications of the educational levels desired by employers for selected job titles. It indicates areas of need for vocational, 2-year collegiate, 4-year collegiate, and short-term courses in addition to the on-the-job training provided by employers.

Table 70 provides information on the 1971 salary characteristics of selected job titles. Although data are limited by the number of employer responses, they do provide some impressions of the relative financial rewards of the various job titles.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. This part of their work force included a large percentage of students with some housewives and retirees in addition to those who worked at other jobs when they were not working for the reporting employer.

The employers' views of the future manpower situation in New Jersey included: (1) lack of skilled labor; (2) concern over the welfare and unemployment situation; (3) expected an increase in needs; and (4) described the future as poor. Approximately 40% did not comment.

TABLE 68
ESTIMATED EMPLOYMENT IN RETAIL FOOD DISTRIBUTION
SERVICES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Butcher	169	0		169	0		0.0	0.0
Buyer, Meat Prod.	243	0		64	0		73.7	0.0
Dairy Clerk	482	607		596	809		23.7	33.3
Dairy Manager	21	0		21	0		0.0	0.0
Deli. Counterman	56	0		0	0		-100.0	0.0
Deli. Manager	21	0		21	0		0.0	0.0
Equipment Operator	166	123		187	134		12.7	8.9
Frozen Food Manager	21	0		21	0		0.0	0.0
Grocery Dept. Head	53	0		53	0		0.0	0.0
Grocery Employees	288	320		309	128		7.3	- 60.0
Manager, Retail	2131	1255		3660	190		71.8	- 84.7
Manager, Whlse./Pack.	11	21		11	11		0.0	- 47.6
Materials Handler	56	0		0	0		-100.0	0.0
Meat Clerk	1166	1322		3481	2769		198.5	109.5
Meat Cutter	3836	948		7029	796		81.8	- 16.0
Meat Dept. Head	615	11		1364	0		121.8	-100.0
Packer	35	0		70	0		100.0	0.0
Produce Clerk	1297	2009		3332	2113		156.9	5.2
Produce Dept. Head	559	96		1393	21		149.2	- 78.1
Route Driver	447	746		1140	1598		155.0	113.9
Salesman, Food Prod.	134	21		144	88		7.5	319.0
Truck Driver	225	183		324	169		44.0	- 7.7
Unskilled Laborer	117	410		170	266		45.3	- 35.1
Total	12,149	8,072		23,559	9,092		93.9	12.6

TABLE 69

EDUCATIONAL LEVELS DESIRED FOR RETAIL FOOD DISTRIBUTION
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level*					
		None	On-The- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Butcher	1	0.0	100.0	100.0	0.0	0.0	0.0
Buyer, Meat Prod.	5	0.0	60.0	20.0	20.0	0.0	20.0
Dairy Clerk	2	0.0	100.0	0.0	0.0	0.0	0.0
Dairy Manager	1	0.0	100.0	0.0	0.0	0.0	0.0
Deli. Manager	1	0.0	100.0	0.0	0.0	0.0	0.0
Equipment Operator	1	0.0	100.0	0.0	0.0	0.0	0.0
Frozen Food Manager	1	0.0	100.0	0.0	0.0	0.0	0.0
Grocery Dept. Head	1	0.0	100.0	0.0	0.0	0.0	0.0
Grocery Employees	1	0.0	0.0	0.0	100.0	0.0	0.0
Manager, Retail	26	0.0	61.5	15.3	100.0	0.0	0.0
Manager, Whlse./Pack.	1	0.0	0.0	100.0	23.0	15.3	7.6
Meat Clerk	19	5.2	73.6	10.5	31.5	0.0	0.0
Meat Cutter	27	22.2	70.3	18.5	29.6	3.7	0.0
Meat Dept. Head	10	0.0	60.0	20.0	30.0	20.0	0.0
Packer	1	0.0	100.0	0.0	0.0	0.0	0.0
Produce Clerk	18	16.6	77.7	5.5	16.6	0.0	0.0
Produce Dept. Head	13	0.0	69.2	15.3	23.0	15.3	0.0
Route Driver	3	0.0	100.0	66.6	66.6	0.0	0.0
Salesman, Food Prod.	2	0.0	50.0	50.0	0.0	0.0	0.0
Truck Driver	6	50.0	16.6	16.6	0.0	16.6	0.0
Unskilled Laborer	5	20.0	40.0	20.0	0.0	20.0	0.0

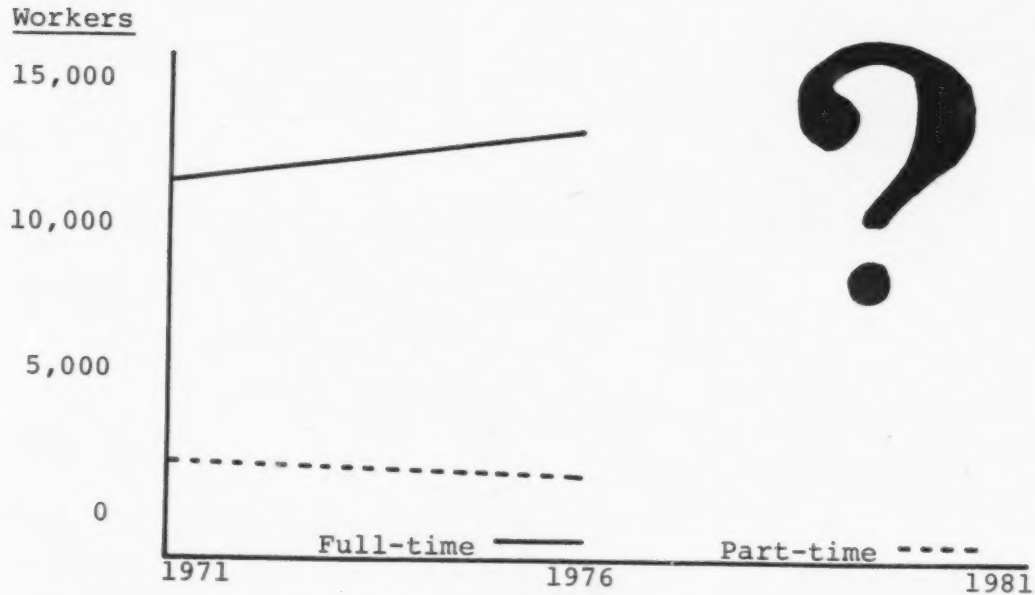
*May add to more than 100 percent since employers may have indicated more than one level for some jobs.

TABLE 70

SALARY CHARACTERISTICS FOR RETAIL FOOD DISTRIBUTION
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Buyer, Meat Prod.	4	110	250	182	150	550
Dairy Clerk	2	80	88	84	102	120
Dairy Manager	2	110	139	124	110	139
Deli. Counterman	1	140	140	140	165	165
Deli. Manager	2	130	178	154	150	180
Equipment Operator	3	90	110	100	125	160
Frozen Food Manager	2	139	140	139	139	160
Grocery Dept. Head	2	95	150	122	190	200
Grocery Employees	2	75	108	91	153	160
Manager, Retail	26	90	275	173	150	350
Meat Clerk	20	45	185	111	60	290
Meat Cutter	28	60	232	140	130	250
Meat Dept. Head	11	125	250	195	175	350
Packer	1	120	120	120	200	200
Produce Clerk	16	65	132	103	80	200
Produce Dept. Head	13	80	200	142	139	250
Route Driver	5	100	250	155	135	250
Salesman, Food Prod.	1	125	125	125	155	155
Truck Driver	5	40	200	122	50	200
Unskilled Laborer	2	80	100	90	145	150

IX. LUMBER AND BUILDING MATERIAL SERVICES



Lumber and building material businessmen projected a 10.4% increase in full-time positions and a 5.2% decrease in seasonal or part-time positions during the five-year period reported in Table 71. They indicated a need for 13,273 full-time workers in 1976 compared with 12,024 in 1971. The estimation for seasonal or part-time workers was 1,684 in 1976 compared with 1,777 in 1971. Considering a 2% annual replacement rate due to retirement and other factors, 2,514 people will have to be recruited and trained for the 1,249 new positions and the 1,265 replacement positions for full-time workers during the five-year period. The seasonal or part-time situation is different. A decrease of 113 positions reduces the replacement need to 60 workers.

The lumber and building material area is very diversified in

respect to the technical background needed for the various job titles. It was assumed that many of the job titles would require knowledge and skills in natural resources, but a large number of these jobs require knowledge and skills in other areas. A more detailed analysis of the trends by job title is available in Table 71.

Table 72 provides some indications of the educational levels desired by employers for selected job titles. The entire range of educational levels is represented, but the majority of workers are prepared on-the-job, in short courses, or in high school vocational programs.

Table 73 provides information on the 1971 salary characteristics of selected job titles. Although data are limited, they do provide some impressions of the relative financial rewards of the various jobs.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. A large number of the employers hired students, and many of the seasonal or part-time workers were employed at other jobs during the off-season.

The employers' views of the future manpower situation in New Jersey included: (1) lack of skilled workers; (2) optimistic; (3) pessimistic; and (4) depends on the industry.

TABLE 71

ESTIMATED EMPLOYMENT IN LUMBER AND BUILDING MATERIAL SERVICES IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Alum. Siding Instal.	8	8	8	8	8	8	0.0	0.0
Alum. Window/Door Instal.	8	0	0	25	0	0	212.5	0.0
Block Machine Oper.	25	0	0	25	0	0	0.0	0.0
Carpenter	247	17	17	180	0	0	- 27.1	-100.0
Concrete Bat./Block Mach.	51	0	0	59	0	0	15.7	0.0
Concrete Bat./Concrete Pl.	139	0	0	161	0	0	15.8	0.0
Fence Installer	8	8	8	25	17	17	212.5	112.5
Fence Installer Helper	8	0	0	8	8	8	0.0	Plus
Foreman, Bldg. Materials	406	6	6	459	0	0	13.1	-100.0
Foreman, Carpenter	141	0	0	85	0	0	- 39.7	0.0
Foreman, Kit. Cabinet	82	17	17	118	25	25	43.9	47.1
Hardware Man	6	0	0	0	0	0	-100.0	0.0
Ironworker	76	0	0	126	0	0	65.8	0.0
Kitchen Cab. Instal.	25	0	0	76	0	0	204.0	0.0
Kitchen Cab. Serviceman	101	0	0	152	0	0	50.5	0.0
Machine Operator	121	0	0	182	0	0	50.4	0.0
Manager	629	57	57	564	25	25	- 10.3	- 56.1
Mechanic Helper	0	25	25	51	0	0	Plus	-100.0
Oil Burner Serviceman	6	0	0	0	0	0	-100.0	0.0
Plumber	236	93	93	227	202	202	- 3.8	117.2
Roof Installer	505	126	126	505	0	0	0.0	-100.0
Sales Clerk	655	56	56	474	25	25	- 27.6	- 55.4
Salesman	1560	290	290	1468	322	322	- 5.9	11.0

TABLE 71 (continued)

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Sanders	12	0	0	0	0	0	-100.0	0.0
Service Technician	42	0	0	59	0	0	40.5	0.0
Sheet Rock Finisher	12	0	0	12	0	0	0.0	0.0
Sheet Rock Hanger	34	0	0	51	0	0	50.0	0.0
Sheet Rock Taper	24	0	0	24	0	0	0.0	0.0
Shopman	202	51	0	202	0	0	0.0	-100.0
Spray Man	6	0	0	0	0	0	-100.0	0.0
Truck Driver	2452	294	0	2110	366	0	-13.9	24.5
Truck Driver Helper	8	17	0	0	0	0	-100.0	-100.0
Truck Lift Operator	754	88	0	633	113	0	-16.0	28.4
Unskilled Laborer	917	549	0	815	498	0	-4.6	-9.3
Warehouse Stockman	542	24	0	1804	24	0	232.8	0.0
Woodworkers	1900	51	0	2500	51	0	31.6	0.0
Yardman	76	0	0	25	0	0	-67.1	0.0
Total	12,024	1,777		13,273	1,684		10.4	-5.2

TABLE 72

EDUCATIONAL LEVELS DESIRED FOR LUMBER AND BUILDING
MATERIAL OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level *					
		None	On-the Job	Short Courses	High School Vocational	2-Year College	4-Year College
Alum. Siding Instal.	1	100.0	0.0	0.0	0.0	0.0	0.0
Alum. Window/Door Instal.	1	0.0	100.0	0.0	0.0	0.0	0.0
Block Machine Oper.	1	0.0	100.0	0.0	0.0	0.0	0.0
Carpenter	8	0.0	50.0	0.0	62.5	0.0	0.0
Concrete Bat./Blk. Mach.	1	0.0	100.0	0.0	0.0	0.0	0.0
Concrete Bat./Concrete Pl.	1	0.0	100.0	0.0	0.0	0.0	0.0
Drafting Estimator	1	0.0	0.0	0.0	0.0	100.0	0.0
Fence Installer	3	33.3	100.0	0.0	0.0	0.0	0.0
Fence Installer Helper	1	0.0	100.0	0.0	0.0	0.0	0.0
Foreman, Bldg. Materials	20	10.0	70.0	5.0	25.0	0.0	0.0
Foreman, Carpenter	9	33.3	44.4	11.1	22.2	0.0	0.0
Foreman, Ironworker	1	0.0	0.0	100.0	0.0	0.0	0.0
Foreman, Kit. Cabinet	3	33.3	33.3	0.0	66.6	0.0	0.0
Hardware Man	1	0.0	100.0	0.0	100.0	0.0	0.0
Ironworker	1	0.0	0.0	100.0	0.0	0.0	0.0
Kitchen Cab. Instal.	1	0.0	0.0	0.0	100.0	0.0	0.0
Kitchen Cab. Serviceman	1	0.0	0.0	0.0	100.0	0.0	0.0
Lead Man	1	0.0	100.0	0.0	100.0	0.0	0.0
Machine Operator	1	100.0	0.0	0.0	0.0	0.0	0.0
Manager	22	18.1	45.4	4.5	22.7	13.6	13.6
Oil Burner Serviceman	1	0.0	0.0	0.0	100.0	0.0	0.0
Roof Installer	1	100.0	0.0	0.0	0.0	0.0	0.0
Sales Clerk	15	6.6	60.0	0.0	33.3	0.0	0.0

TABLE 72 (continued)

Job Titles	No. of Employers Responses	Percent of Employers Specifying Each Educational Level *					
		None	On-the Job	Short Courses	High School Vocational	2-Year College	4-Year College
Salesman	37	8.1	37.8	2.7	16.2	37.8	8.1
Sanders	1	0.0	100.0	0.0	100.0	0.0	0.0
Service Technician	1	0.0	0.0	0.0	100.0	0.0	0.0
Sheet Rock Finishers	1	0.0	100.0	0.0	0.0	0.0	0.0
Sheet Rock Hangers	2	0.0	100.0	0.0	0.0	0.0	0.0
Sheet Rock Tapers	1	0.0	100.0	0.0	0.0	0.0	0.0
Shopman	1	100.0	0.0	0.0	0.0	0.0	0.0
Spray Man	1	0.0	100.0	0.0	100.0	0.0	0.0
Truck Driver	34	8.8	67.6	5.8	20.5	0.0	0.0
Truck Lift Oper.	22	9.0	81.8	0.0	9.0	0.0	0.0
Unskilled Laborer	19	21.0	84.2	0.0	5.2	0.0	0.0
Warehouse/Stockman	2	0.0	50.0	0.0	100.0	0.0	0.0
Woodworkers	1	0.0	100.0	0.0	0.0	0.0	0.0
Yardman	3	66.6	33.3	0.0	0.0	0.0	0.0

*May add to more than 100 percent since employees may have indicated more than one level for some jobs.

TABLE 73

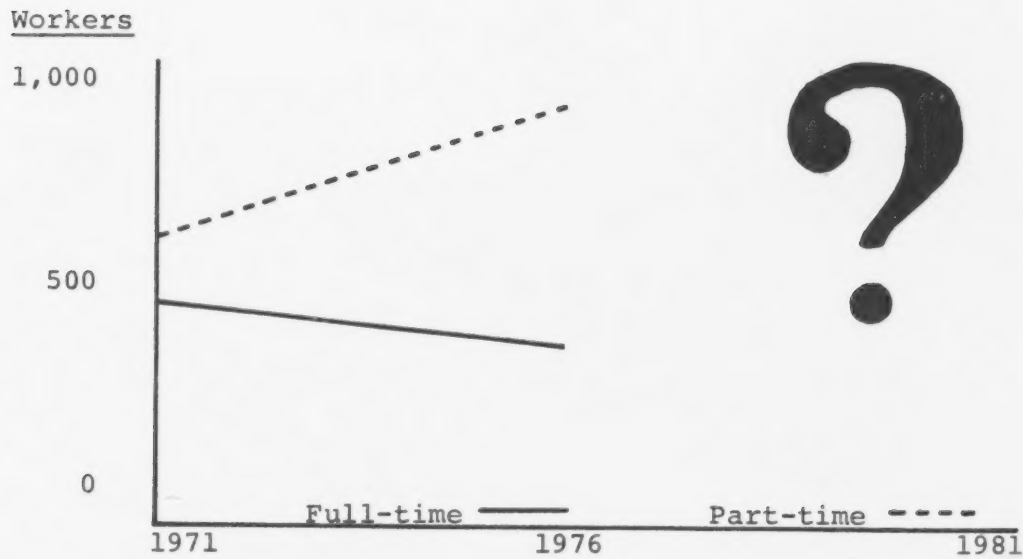
SALARY CHARACTERISTICS FOR LUMBER AND BUILDING
MATERIAL OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary				No. of Employer Responses	Potential Maximum Salary			
	Employer Responses	Weekly (dollars)				Employer Responses	Weekly (dollars)		
		Low	High	Mean			Low	High	Mean
Alum. Siding Instal.	1	150	150	150	1	300	300	300	
Alum. Window/Door Instal.	1	120	120	120	1	200	200	200	
Block Machine Oper.	1	120	120	120	1	140	140	140	
Carpenter	7	92	300	137	7	125	300	176	
Concrete Bat./Blk.Mach.	1	120	120	120	1	140	140	140	
Concrete Bat./Concrete Pl.	1	120	120	120	1	140	140	140	
Fence Installer	3	110	150	126	3	180	200	188	
Fence Installer Helper	1	80	80	80	1	110	110	110	
Foreman, Bldg. Materials	16	120	200	156	17	125	300	191	
Foreman, Carpenter	8	120	240	161	8	160	260	209	
Foreman, Kitchen Cabinet	2	100	200	150	2	200	300	250	
Kitchen Cab. Instal.	1	160	160	160	1	200	200	200	
Kitchen Cab. Serviceman	1	160	160	160	1	200	200	200	
Machine Operator	1	120	120	120	1	135	135	135	
Manager	19	130	300	193	22	140	350	239	
Oil Burner Serviceman	1	225	225	225	1	250	250	250	
Plumbers	1	120	120	120	1	160	160	160	
Roof Installer	1	125	125	125	1	250	250	250	
Sales Clerk	14	97	195	130	12	125	225	159	
Salesman	31	100	300	173	31	135	500	233	
Sheet Rock Finisher	1	200	200	200	1	375	375	375	
Sheet Rock Hanger	2	120	150	135	2	170	300	235	
Sheet Rock Tapers	1	175	175	175	1	325	325	325	
Shopman	1	100	100	100	1	150	150	150	
Truck Driver	33	90	459	133	32	100	225	156	
Truck Driver Helper	1	100	100	100	1	150	150	150	

TABLE 73 (continued)

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Truck Lift Oper.	18	100	175 123	20	110	200 149
Unskilled Laborer	14	80	120 100	15	100	165 123
Warehouse Stockman	1	120	120 120	1	143	143 143
Woodworkers	1	100	100 100	1	160	160 160
Yardman	3	95	115 103	2	105	120 112

X. FISHERY INDUSTRY



Fishery businessmen projected a 36.4% decrease in full-time positions and a 56.0% increase in seasonal or part-time positions during the five-year period reported in Table 74. They indicated a reduction in the number of full-time positions from 467 in 1971 to 297 in 1976. The estimation for seasonal or part-time workers was 900 in 1976 compared with 577 in 1971. It was difficult to obtain projections in this area because of the many fluctuations that influence this industry. Several good years of fishing may increase the size of the industry very rapidly, but several poor years may influence people to seek other types of work.

Table 75 provides some indications of the educational levels desired by employers. Most of the positions involved on-the-job

training, but some of the job titles did indicate need for short-courses or high school vocational programs.

Table 76 provides some information on the 1971 salary characteristics for selected job titles. It should also be noted that the financial rewards of this industry vary widely with dependence on successful fishing.

Employers provided some perspective into seasonal or part-time employment in respect to several questions. The off-season activities of seasonal or part-time workers included school, other jobs, and unemployment.

The employers' views of the future manpower situation in New Jersey included lack of trained manpower and a concern over liberal welfare regulations. Several did not comment, and some considered the future outlook as poor.

TABLE 74
ESTIMATED EMPLOYMENT IN THE FISHERY INDUSTRY
IN NEW JERSEY FOR 1971 AND 1976

Job Titles	1971 Jobs			1976 Jobs			% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of	No. of Full Time	No. of Part Time	No. of	Full Time	Part Time
Captain, Fishing Vessel	11	38		23	72		109.1	89.5
Cook, Fishing Vessel	0	30		0	49		0.0	63.3
Deckhand	21	90		7	62		- 66.7	- 31.1
Engineer, Marine Diesel	0	84		0	92		0.0	9.5
Fisherman	8	164		23	475		187.5	189.6
Hatchery Foreman	7	21		10	34		42.9	61.9
Hatchery Worker	14	0		21	0		50.0	0.0
Mate	0	15		0	46		0.0	206.7
Pilot	0	15		0	46		0.0	206.7
Salesman	7	0		10	0		42.9	0.0
Unskilled Laborer	399	120		203	24		49.1	80.0
Total	467	577		297	900		- 36.4	56.0

TABLE 75

EDUCATIONAL LEVELS DESIRED FOR FISHERY
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	No. of Employer Responses	Percent of Employers Specifying Each Educational Level *					
		None	On-the- Job	Short Courses	High School Vocational	2-Year College	4-Year College
Capt. Fishing Vessel	5	20.0	60.0	0.0	20.0	0.0	0.0
Cook, Fishing Vessel	3	33.3	33.3	33.3	0.0	0.0	0.0
Deckhand	5	20.0	80.0	0.0	0.0	0.0	0.0
Engineer, Marine Diesel	1	0.0	0.0	0.0	100.0	0.0	0.0
Fisherman	2	0.0	100.0	0.0	0.0	0.0	0.0
Hatchery Foreman	1	0.0	100.0	0.0	0.0	0.0	0.0
Hatchery Worker	1	0.0	100.0	0.0	0.0	0.0	0.0
Mate	1	0.0	0.0	0.0	0.0	0.0	0.0
Pilot	1	0.0	0.0	0.0	100.0	0.0	0.0
Salesman	1	0.0	100.0	0.0	100.0	0.0	0.0
Unskilled Laborer	5	40.0	60.0	0.0	0.0	0.0	0.0

* May add to more than 100 percent since employees may have indicated more than one level for some jobs.

TABLE 76
SALARY CHARACTERISTICS FOR FISHERY
OCCUPATIONS IN NEW JERSEY, 1971

Job Titles	Beginning Salary			Potential Maximum Salary		
	No. of Employer Responses	Weekly (dollars)		No. of Employer Responses	Weekly (dollars)	
		Low	High Mean		Low	High Mean
Capt. Fishing Vessel	2	220	250 235	2	220	250 235
Cook, Fishing Vessel	1	135	135	2	135	350 242
Deckhand	3	100	230 176	3	100	230 176
Engineer, Marine Diesel				1	500	500 500
Fisherman				1	350	350 350
Hatchery Foreman	1	150	150 150	1	200	200 200
Hatchery Worker	1	100	100	1	150	150 150
Mate				1	500	500 500
Pilot				1	500	500 500
Salesman	1	150	150 150	1	200	200 200
Unskilled Laborer	4	50	110 82	4	110	200 146

XI. SUMMARY AND CONCLUSIONS

Effective occupational preparation requires a coherent relationship between the education of people and the labor market in which they will work. Educational programs in natural resources and/or agriculture should be responsive to the changing needs in New Jersey. Changing employment patterns and related occupational information are needed for planning, administering, and evaluating educational programs if they are to be successful.

The Problem

The major purposes of the study were to determine the present and projected employment opportunities for jobs in natural resources and/or agriculture in respect to: (1) full-time and seasonal or part-time employment; (2) educational levels desired by employers for specific jobs; (3) salary characteristics; and (4) descriptive labor market information.

Procedure

Business categories related to natural resources and/or agriculture in New Jersey were identified by the advisory committee. A list of employers with an annual payroll of \$1,000 or more was prepared for all business categories with the exception of nurseries, nursery dealers, commercial farmers, and governmental employing units. The 1970 List of New Jersey Certified Nurserymen and Dealers was used for nurseries and nursery dealers. The Farm Bureau mailing list, except for

nurserymen, was used for commercial farmers. A complete list of governmental employing units was available.

The mailing lists were sampled within each business category to insure representation for the three geographical areas of the State and three size-of-business categories.

A basic questionnaire format was developed that included: (1) the letter of introduction, (2) instructions, (3) basic format for manpower needs data, and (4) descriptive information. Fifteen lists of job titles were developed for soliciting the manpower needs data from the various business categories. Some lists of job titles were used for several business categories when similar job titles were involved.

Data were analyzed for each job title to determine: (1) full-time and seasonal or part-time employment opportunities for 1971 and 1976; (2) levels of education desired by employers; (3) salary characteristics; and (4) descriptive information on the manpower situation in New Jersey.

Summary

Changing employment patterns were projected for occupations in natural resources and/or agriculture during the five-year period from 1971 to 1976. The most noticeable changes included greater opportunities for full-time jobs and fewer opportunities for seasonal or part-time jobs. Data in Table 77 indicate a 30.7% increase in full-time positions from 65,757 in 1971 to 85,930 in 1976. Seasonal or part-time positions show a 17.2%

TABLE 77

ESTIMATED EMPLOYMENT IN NATURAL RESOURCES AND/OR AGRICULTURAL
BUSINESSES AND SERVICES IN NEW JERSEY FOR 1971 AND 1976

Business Areas	1971 Jobs		1976 Jobs		% Increase or Decrease	
	No. of Full Time	No. of Part Time	No. of Full Time	No. of Part Time	Full Time	Part Time
Horticultural Businesses						
s Services	11,929	14,614	15,314	15,116	28.4	3.4
Natural Resource Bus.						
& Govern. Services	2,387	2,298	3,086	2,659	29.3	15.7
Farm Production &						
Related Services	6,221	23,679	7,161	11,441	15.1	- 51.7
Animal Services	3,233	1,087	3,774	808	16.7	- 25.7
Food Processing						
Industry	8,734	216	10,852	261	24.3	20.8
Food Distribution						
Industry	20,762	11,300	32,173	13,105	55.0	15.9
Lumber and Building						
Material Services	12,024	1,777	13,273	1,684	10.4	- 5.2
Fishery Industry	467	577	297	900	- 36.4	56.0
Total	65,757	55,548	85,930	45,974	30.7	- 17.2

decrease from 55,548 in 1971 to 45,974 in 1976. Considering a 2% annual replacement rate due to retirement and other factors, 27,051 people will have to be recruited and trained for the 19,627 new positions and the 7,424 replacement positions for the full-time work force. The seasonal or part-time situation is different. When the replacement number of 5,036 is considered, there will still be a surplus of 4,434 workers.

Presently, approximately 250 college graduates and 500 high school vocational agriculture graduates are prepared for entry into these occupations each year. This preparation is supplemented by on-the-job training, young and adult evening vocational classes, and short courses for people who are presently involved in these occupations. Moderate expansion is presently planned at the high school, 2-year collegiate, and 4-year collegiate levels.

A general review of the data on educational levels desired by employers indicates that: (1) most of the expansion is in job titles where training is desired; (2) many of the job titles with large decreases in numbers require very little training; and (3) many of the seasonal or part-time employees are in jobs that require very little training.

The seasonal or part-time work force is very complex. It includes migrants who may work at similar jobs in other geographic areas during other seasons of the year. It may be the only employment desired by many housewives, students, and retirees.

It may also supplement another local seasonal or full-time job in other industries in some situations.

Conclusions

The following conclusions were drawn from the analyzed data:

1. Employers predict an increased need for full-time workers and a surplus of seasonal or part-time workers.
2. There is a need for more training than is presently provided by public educational institutions.
3. The major gap in occupational preparation is at the 2-year collegiate or technical level.
4. Salary characteristics vary. They appear to be a reward for educational preparation, but in some situations, salary may be a reward for initiative, i.e. salesman. Often, it is a reward for a high degree of specialization. The highest salaries are in professional, sales, and managerial areas.
5. Employers are concerned that liberal welfare and unemployment compensation regulations tend to discourage a willingness to work.
6. Current assessments of changing occupational patterns will be needed at approximately five-year intervals to provide base line data for re-evaluating and revising educational programs that prepare people for occupations in natural resources and/or agriculture.

It is recommended that a feasibility grant be generated to study alternatives and recommend a state plan for offering technical education in natural resources and/or agriculture in New Jersey.

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APPENDICES

NEW JERSEY MANPOWER NEEDS SURVEY
of
NATURAL RESOURCES AND AGRICULTURE

1. Please write the job title of the individual completing the survey (owner, manager, personnel director, etc.) _____
2. List the New Jersey (county) in which your business is located (location of employees). _____
3. Briefly describe your type of business (i.e. florist, fruit and vegetable processing, farm and garden supply stores, etc.) _____

Section A:

The list of job titles should describe most of the jobs that require knowledge and skills in natural resources and agriculture. Use the job titles that most clearly define the duties. If you cannot find some of the job titles that fit your business, please list them under "other job titles" in the blank spaces at the end of the list. Do not include secretaries, bookkeepers, or others who do not require training in natural resources and agriculture.

Section B:

Please list the correct number of part-time or seasonal and full-time positions (employees and/or owners) for 1971 and estimates for 1976 who are employed in New Jersey. A part-time or seasonal employee is one who works less than the equivalent of 150 full-time days per year. Count a position only once if you have had a turnover of several people in the position during the year.

Section C:

Please check only one of the six columns that best describes the type of training you desire for each of the job titles.

Section D:

Please use 1971 figures to show both the beginning and potential maximum salary on a weekly basis.

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APPENDIX A

NEW JERSEY MANPOWER NEEDS
IN AREAS RELATED TO
NATURAL RESOURCES AND AGRICULTURE

A STATE-SPONSORED STUDY

10 Seminary Place
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Vocational Ed.

Fred Watts
New Jersey Dept. of
Labor and Industry

DIRECTOR

Dr. Philip L. Edgecomb
(201) 247-1766 Ext. 6937

Dear Sir:

Do you have problems hiring trained manpower? We may be able to help. The allocation of funds for short-term and long-term training programs (out-of-school, high school, and college) depends on accurate manpower needs information. You can help insure that your type of business is well represented in the priorities for New Jersey educational programs by completing the enclosed confidential survey. The success of the project depends on people like you because your estimate of future manpower needs is our best source of information.

All replies are confidential. The information will be summarized so that your firm cannot be identified in the final report.

We are eager to get the results to you as quickly as possible. Summaries of the various business areas will be published in the respective trade journals. On the survey form, please list any trade journals that should receive a copy of the report.

Please complete the survey and return it to us in the enclosed postpaid envelope. It will help speed up our reports to the trade journals if it can be completed this week.

Sincerely yours,

Philip L. Edgecomb

Philip L. Edgecomb
Project Director

ARBORICULTURE AND HORTICULTURE

Section A Job Titles	Section B Number of Jobs	Section C Training Required (check one)					Section D Salary Information			
	Actual Number of Jobs-1971	Estimated Number of Jobs-1976	None	On-the-job	Short courses	High school	2 year college	4 year college	Beginning Salary (1971) Weekly	Potential Maximum Weekly Salary (1971)
<i>Example: Salesman</i>			0	2	1	3			-	\$110 \$180
51 Agric. Equip. Operator										
52 Floral Designer										
53 Greenskeeper										
54 Groundskeeper										
55 Landscape Architect										
56 Landscape Gardener										
57 Manager or Supt.										
58 Mechanic and/or helper										
59 Nursery Worker										
60 Salesman										
61 Sales Clerk										
62 Tree Pruner										
63 Tree Surgeon										
64 Tree Surgeon helper										
65 Truck Driver										
66 Unskilled Laborer										
Other Job Titles (Specify)										
Total number of jobs in your business requiring competencies in natural resources and agriculture.									XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX

Are any of the seasonal employees listed above primarily migrants?

Of the number of employees listed above, how many do you house on a seasonal basis?

Your comments on the following will be appreciated:

1. In general, what type of jobs do your seasonal or part-time employees do during the off season when they are not employed by your firm?
2. Please list the trade journals in your business area that should receive a copy of the report on "New Jersey Manpower Needs in Areas Related to Natural Resources and Agriculture."
3. Briefly describe your views on the future manpower situation in New Jersey in respect to your business area.

Thank you for your cooperation.

APPENDIX B

POPULATION, SAMPLE, AND SAMPLE RETURNS FOR SELECTED BUSINESS CATEGORIES

Business Categories	Population	Sample	Sample Returns	Family Businesses in Sample	Non-Family Businesses in Sample
I. HORTICULTURAL BUSINESSES AND SERVICES					
1. Nurseries	1001	322	86	16	70
2. Nursery Dealers	271	134	27	7	20
3. Horticultural Services	1075	329	113	7	106
4. Golf Courses	184	145	24	0	24
5. Florists	452	201	46	0	46
6. Farm & Garden Supply	179	130	29	1	28
II. NATURAL RESOURCE BUSINESSES AND GOVERNMENTAL SERVICES					
1. Sporting & Recreational	76	74	16	0	16
2. Water Supply & Sewage	70	63	13	0	13
3. Municipal & County Govt.	586	586	206	0	206
4. State & Federal Govt.	6	6	6	0	6
III. FARM PRODUCTION & RELATED SERVICES					
1. Commercial Farming	3727	534	86	26	60
2. Agricultural Machinery	116	99	24	1	23

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APPENDIX B (continued)

Business Categories	Population	Sample	Sample Returns	Family Businesses in Sample	Non-Family Businesses in Sample
IV. ANIMAL SERVICES					
1. Animal Health & Care	347	199	63	0	63
2. Pharmaceutical Research	90	81	11	0	11
3. Race Tracks & Stables	43	38	9	0	9
V. FOOD PROCESSING INDUSTRY					
1. Meat Products	98	88	8	0	8
2. Dairy Products	112	99	19	2	17
3. Canned Fruits & Vegetables	30	30	8	0	8
4. Grain Mill Products & Ser.	43	43	6	0	6
VI. FOOD DISTRIBUTION INDUSTRY					
1. Wholesale Food	1238	447	62	7	55
2. Retail Food	2514	543	71	15	56
VII. LUMBER & BUILDING MATERIAL SERVICES					
	1102	393	57	2	55
VIII. FISHERY INDUSTRY					
	58	51	13	0	13
TOTAL	13,418	4,635	1,003	84	919

APPENDIX C

COEFFICIENTS OF VARIATION FOR ESTIMATED EMPLOYMENT
OPPORTUNITIES IN SELECTED BUSINESS CATEGORIES

Business Categories	Coefficients of Variation (Percentages)			
	1971		1976	
	Full Time	Part Time	Full Time	Part Time
I. HORTICULTURAL BUSINESS & SERVICES				
1. Nurseries	202	244	192	234
2. Nursery Dealers	112	97	119	110
3. Horticultural Services	383	220	348	218
4. Golf Courses	46	72	70	118
5. Florists	75	109	101	122
II. NATURAL RESOURCE BUSINESSES AND GOVERNMENTAL SERVICES				
1. Sporting & Recreational	260	78	217	107
2. Water Supply & Sewage	192	181	156	227
3. Municipal & County Govt.	178	151	263	191
4. State & Federal Govt.	0	0	0	0
III. FARM PRODUCTION & RELATED SERVICES				
1. Commercial Farming	390	175	223	140
2. Agricultural Machinery	155	130	164	157

APPENDIX C (continued)

Business Categories	Coefficients of Variation (Percentages)			
	1971		1976	
	Full Time	Part Time	Full Time	Part Time
IV. ANIMAL SERVICES				
1. Animal Health & Care	112	149	116	163
2. Pharmaceutical Research	85	0	85	0
3. Race Tracks & Stables	98	241	149	346
V. FOOD PROCESSING INDUSTRY				
1. Meat Products	121	150	110	214
2. Dairy Products	187	211	234	262
3. Canned Fruits & Vegetables	137	263	119	263
4. Grain Mill Products & Services	77	115	77	291
VI. FOOD DISTRIBUTION INDUSTRY				
1. Wholesale Food	147	574	159	615
2. Retail Food	319	350	383	418
VII. LUMBER & BUILDING MATERIAL SERV.				
	144	165	191	189
VIII. FISHING INDUSTRY				
	232	134	249	219